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Supreme Court, U.S.
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No. 85-1513

IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

EDWIN W. EDWARDS, in his Official Capacity as
Governor of Louisiana, WILLIAM J. GUSTE, JR.,
in his Official Capacity as Attorney General
of Louisiana, LOUISIANA DEPARTMENT OF
EDUCATION, and THOMAS G. CLAUSEN,
in his Official Capacity as Superintendent
of Education of Louisiana,

Appellants,

v.

DON AGUILLARD *et al.*,

Appellees.

ON APPEAL FROM THE
UNITED STATES COURT OF APPEALS FOR THE
FIFTH CIRCUIT

BRIEF OF APPELLANTS

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QUESTIONS PRESENTED[1]

I. **Does the decision under review contradict the unquestioned procedural rules for summary judgment specified by this Court, thus requiring summary reversal, as seven judges of a closely-split U.S. Court of Appeals argued compellingly in dissent, when**

  A. *Uncontroverted affidavits* of the State on factual issues erroneously *were not "taken as true" and "admitted"* for purposes of summary judgment and appeal, and *numerous factual issues* raised by the State erroneously *were resolved by summary judgment* and *were not even viewed in the "most favorable light*," but instead erroneously were resolved by judicial notice?

  B. *Creation-science consists of scientific evidence and not religious concepts, and evolution is no more scientific or non-religious* than creation-science, as specifically circumscribed by the Louisiana Balanced Treatment Act, as settled for purposes of appeal by the State's uncontroverted affidavits, and as settled for purposes of appeal by the State's documented factual assertions when viewed in the most favorable light?

II. **Is the Louisiana Balanced Treatment for Creation-Science and Evolution-Science Act constitutional under the Establishment Clause of the First Amendment, and does the Act advance academic freedom under that Amendment, thus requiring reversal, as seven judges of the closely-split U.S. Court of Appeals argued forcefully in dissent in this appeal from summary judgment, when**

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[1] The parties to the proceeding under review are as follows: Appellants are all listed in the caption. The nonparticipating defendant is St. Tam-

A. Balanced treatment for creation-science is constitutional under the Establishment Clause, whether under the tripart test or the alternative historical test, in light of the *decisions of this Court and other courts that allow public school reference to a creator or God (which creation-science does not necessitate)* in *Engel v. Vitale, Lynch v. Donnelly, Zorach v. Clausen*, etc.?

B. Balanced treatment for creation-science is constitutional under the Establishment Clause, under the *tripart test*, because the legislative purpose and primary effect prongs are met by the *expressly stated, heavily documented, and precedentially supported purpose and effect of advancing "academic freedom" to hear additional scientific evidence* on the subject of origins, in the words of the statute, and as constantly reaffirmed in the official legislative transcripts, and because no entanglement reasonably can be expected with religious institutions?

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many Parish School Board. Appellees are Don Aguillard; Rev. Philip Allen; Dr. Paul Beisenherz; Rabbi Murray Blackman; Quentin Dastugue; Charles Donnellan, individually and as father and next friend of Mary and Kathleen Donnellan; Dr. Milton Fingerman; Anthony J. and Gayle Gagliano, individually and as parents and next friends of Lisa Gagliano; Rev. William W. Hatcher; Louisiana Federation of Teachers; Louisiana Science Teachers Association; Fr. George Lundy; Rev. James H. Monroe; National Association of Biology Teachers, Inc.; National Coalition for Public Education and Religious Liberty; National Science Supervisors Association; National Science Teachers Association; Rabbinical Council of New Orleans; Rev. F. T. Schumacher; Nancy Schweitzer; Bishop Kenneth Shamblin; Rev. Lonnie M. Sibley; Keith Sterzing, individually and as father and next friend of Lara and Peter Sterzing; Rev. James L. Stovall; University of New Orleans Federation of Teachers; Dr. Malcolm Coffin Webb, individually and as father and next friend of Peter and Joel Webb; Rev. Charles S. Womelsdorf; American Association for the Advancement of Science; Louisiana State Board of Elementary and Secondary Education; Orleans Parish School Board. There are no parents, subsidiaries, or affiliates known to appellants.

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CERTIFICATE OF SERVICE

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

EDWIN W. EDWARDS *et al.*,
Appellants,
v.
DON AGUILLARD *et al.*,
Appellees.

OPINIONS BELOW

This appeal[2] is taken from the closely-divided (8-7) denial of rehearing by the *en banc* U.S. Court of Appeals for the Fifth Circuit,[3] over the forceful dissent of seven judges on that Court (Appendix A). The dissenting seven judges found that balanced treatment of creation-science and evolution is constitutional and that creation-science is scientific and nonreligious, writing as follows:

> [T]hey did *not* seek to further their aim by requiring that *religious doctrine* be taught in public school. Instead, they chose a more modest tactic—one that I am persuaded does *not infringe the Constitution.*
>
> . . . .
>
> It follows that the Louisiana statute requires no more than that neither theory about the origins of life and matter be misrepresented as fact, and that if *scientific evidence* supporting either view of how these things came about be presented in public schools, that supporting the other must be—so that within the reasonable limits of the curriculum, the subject of origins will be discussed in a balanced manner if it is discussed at all. I see nothing illiberal about such a requirement, nor can I imagine that Galileo or Einstein would have found fault

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[2] This Court noted probable jurisdiction on May 5, 1986.

[3] Aguillard v. Edwards, 778 F.2d 225 (5th Cir. 1985) (App. A to Brief).

> with it. Indeed, so far as I am aware even Ms. O'Hair has never asked for more than equal time.[4]

Judges Gee, Reavley, Garwood, Higginbotham, Hill, and Jones and Chief Judge Clark also found a secular legislative purpose as well as a secular primary effect:

> I should have thought that *requiring the truth to be taught* on any subject displayed its own *secular warrant*, one at the heart of the scientific method itself. Put another way, I am surprised to learn that a state cannot forbid the teaching of half-truths in its public schools, whatever its motive for doing so. Today we strike down a *statute balanced and fair on its face* because of our perception of the reason why it got the votes to pass: one to prevent the closing of children's minds to religious doctrine by misrepresenting it as in conflict with established scientific laws. . . . It comes as news to me, however, that the Constitution forbids a state to require the teaching of truth—any truth, for any purpose, and whatever the effect of teaching it may be.[5]

The constitutional issues are discussed in Section II(A)-(B) *infra*.

A panel of the Fifth Circuit had affirmed summary judgment,[6] which a federal district court had entered[7] under the Establishment Clause, against the Louisiana statute that is under challenge (Appendix C). That summary judgment was entered despite the State's contrary and uncontroverted affidavits (Appendix B) and other factual assertions with extensive documentation. The procedural issues are discussed in Section I(A)-(B) *infra*. An earlier summary judgment, entered under the Louisiana Constitution against the statute, had been reversed by the Fifth Circuit[8] after a certified decision of the Louisiana Supreme Court upholding the statute under the state constitution.[9]

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[4] *Id.* at 226-27 (emphasis added).

[5] *Id.* at 228 (emphasis added).

[6] Aguillard v. Edwards, 765 F.2d 1251 (5th Cir. 1985) (App. B to Jurisdictional Statement). *See generally* Caudill, *Law and Worldview: Problems in the Creation-Evolution Controversy*, 3 J.L. & Religion 1, 21-22, 36 (1985).

[7] Aguillard v. Treen, No. 81-4787 (E.D. La. Jan. 10, 1985) (Supplemental App. to Jurisdictional Statement).

[8] Aguillard v. Treen, 720 F.2d 676 (5th Cir. 1983).

JURISDICTION

The jurisdiction of this Court is under 28 U.S.C. § 1254(2). Rehearing en banc was denied by the appellate court on December 12, 1985, and the notice of appeal was filed in that court on December 23, 1985.

STATEMENT OF THE CASE

The Balanced Treatment Act.[10] The Louisiana "Balanced Treatment for Creation-Science and Evolution-Science Act"[11] was enacted by overwhelming majorities of the Louisiana legislature[12] in 1981. Its stated legislative purpose was for "protecting academic freedom."[13] Its central requirement is for public schools to "give balanced treatment to creation-science and to evolution-science."[14] The Act defines creation-science as scientific data, and *not* as the Biblical account or another religious account of creation:

> (2) "Creation-science" means the *scientific evidences* for creation and inferences from those scientific evidences.
>
> (3) "Evolution-science" means the *scientific evidences* for evolution and inferences from those scientific evidences.[15]

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[9] Aguillard v. Treen, 440 So.2d 704 (La. 1983).

[10] This is not unique as a state-prescribed course of study. Louisiana has a balanced treatment law for economics as well as sixteen other statutes prescribing courses of study. La. Stat. § 17:274; *see* Aguillard v. Treen, 440 So. 2d 705 (La. 1983) (upholding them under La. Const.). Nearly all other states similarly have statutes prescribing courses of study. *E.g.*, Sheldon, *Legislative Control over Public School Curriculum*, 15 WILLAMETTE L. REV. 483 (1979) (listing statutes); 68 AM. JUR. 2d *Schools* § 283 (1973).

[11] La. Rev. Stat. § 17:286.1 *et seq.* (App. C to Brief). That is its official title (hereinafter the "Balanced Treatment Act").

[12] The vote was 71 to 19 (79%) in the Louisiana House and 26 to 12 (68%) in the Senate. J.A. E-A (14), at 2689, 2934.

[13] La. Rev. Stat. § 17:286.2.

[14] *Id.* § 17:286.4(A). The other part of the central requirement is that "each shall be taught as a theory, rather than as proven scientific fact." *Id.*

[15] *Id.* § 17:286.3 (emphasis added).

The scientific and non-religious nature of creation-science, and its comparably scientific and non-religious status vis-á-vis evolution, are discussed in Section I(B) *infra.*

State's Uncontroverted Affidavits. In opposing summary judgment, the State filed five affidavits of expert witnesses, which were not controverted, and which discussed facts showing that the definition of creation-science is non-religious and scientific, that creation-science is non-religious and in fact is as non-religious as evolution, that creation-science is scientific and in fact is as scientific as evolution, and that creation-science can be taught in public schools without religious concepts and in fact can be taught as feasibly as evolution.[16] The appellees not only did *not* controvert them, but did *not* file any substantive affidavits.[17]

State's Other Factual Issues. The state also raised and documented six broad categories of factual claims, including more than 50 material subissues, in a 630-page brief (and a 110-page summary brief) with 1,700 footnotes.[18] These affidavits and other assertions also describe, with exhaustive documentation, how creation-science is supported by "the experimental evidence,"[19] and how "evolution theory is in crisis,"[20] in the words of noncreationist scientists Lipson, Saunders, and Ho. The State presented further factual information on the Act's secular legislative purpose by extensive citations to the lengthy official transcripts of the legislative hearings.[21] The conclusive effect of these uncontroverted affidavits and factual assertions, for purposes of appellate review of summary judgment, is discussed in Section I(A) *infra.* All issues in this appeal were raised in the district court by answer and brief with exhibits, and in the appellate court by brief.

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[16] R.D. 77 Ex. 1-5, R.544 (App. B. to Brief).

[17] The appellees' "Pfeffer affidavit" is a *non*substantive affidavit that authenticates the accuracy of legislative and other exhibits. J. A. E.

[18] R.D. 77, R.542-43; J. A. E. *See infra* Section I(B).

[19] Lipson*, *A Physicist Looks at Evolution,* 31 PHYSICS BULL. 138 (1980) (App. D to Brief); R.D. 77 Ex. 11, R.544); *see infra* Section I(B)(1).

[20] Ho* & Saunders*, *Preface* to BEYOND NEO-DARWINISM ix, ix (M. Ho* & P. Saunders* eds. 1984). *See infra* Section I(B)(2).

[21] These legislative transcripts are in the Record, R.D. 73 Ex. A(7)-(14), and are discussed at *infra* pp. 36-43.

SUMMARY OF ARGUMENT

I. *Procedural Issue.* Summary judgment was procedurally erroneous, and that warrants a summary reversal. The State's filing of *uncontroverted affidavits* on factual issues required those factual statements to be "taken as true" and as "admitted" for purposes of summary judgment and appeal, and the State's *other "genuine issues of material fact"* precluded summary judgment, and should have been viewed in the "most favorable light," as mandated by the clear rules governing summary judgment. Those specific factual issues include the *definition of creation-science*, which is limited to scientific data in the Balanced Treatment Act, and the *comparably scientific and non-religious nature* of creation-science and evolution, all as settled by the State's uncontroverted affidavits and other factual assertions. Seven judges of the closely-split U.S. Court of Appeals agreed with these points in a carefully reasoned and forceful dissent.

II. *Constitutional Issue.* The Balanced Treatment Act is constitutional, and summary judgment against it should be reversed. The constitutionality of the Act is settled under the *decisions* of this Court and of lower courts that allow *public school reference* to a creator or God (which creation-science does *not* necessitate), and thus allow reference to creation as an explanation of scientific data, and under the *historical test* for the Establishment Clause. Constitutionality is also manifest under the *tripart test*, because the secular purpose and primary effect of advancing academic freedom to hear additional scientific information are strongly supported by the Act's express language, by its official legislative transcripts, and by other judicial decisions. The seven-judge dissent from the Fifth Circuit also compellingly made these points.

ARGUMENT

I. THE DECISION UNDER REVIEW CONTRADICTS THE UNQUESTIONED PROCEDURAL RULES FOR SUMMARY JUDGMENT SPECIFIED BY THIS COURT, THUS REQUIRING SUMMARY REVERSAL, AS SEVEN JUDGES OF A CLOSELY-SPLIT U.S. COURT OF APPEALS ARGUED COMPELLINGLY IN DISSENT, FOR THE FOLLOWING REASONS.

A. Uncontroverted Affidavits of the State on Factual Issues Erroneously Were Not "Taken as True" and as "Admitted" for Purposes of Summary Judgment and Appeal, and Numerous Other "Genuine Issues of Material Fact" Raised by the State Erroneously Were Resolved by Judicial Notice and Were Not Viewed in the "Most Favorable Light," in Contradiction to Settled Rules Governing Summary Judgment.[22]

The seven-judge dissent correctly concluded that uniform procedural rules barred the entry of summary judgment by the district court, and required its reversal on appeal, because (1) uncontroverted affidavits must be treated as settling factual issues, as well as because (2) factual issues must be viewed in the most favorable light and must be treated as precluding summary judgment:

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[22] In the event this Court affirms Catrett v. Johns-Manville Sales Corp., 756 F.2d 181 (D.C. Cir. 1985), *cert. granted sub nom.* Celotex Corp. v. Catrett, ___ U.S. ___, 106 S.Ct. 342 (1985), it should summarily reverse the summary judgment rendered in this case, because the appellees filed no evidentiary support for their motion for summary judgment except the legislative transcripts and certain extra-legislative documents. In the event *Catrett* is reversed, it is important to note that the State in opposing summary judgment did file affidavits and other factual assertions that were not controverted. As the dissenting opinion stated in *Catrett*, "I agree with the majority that in most cases defendants [moving for summary judgment] will only be able to establish the absence of a factual dispute by producing positive evidence that undermines the plaintiff's factual showing." 756 F.2d at 190 (Bork, J., dissenting). *Accord, id.* at 184 (majority opinion).

> [T]he record contains *affidavits* . . . which affirm that the above propositions are correct. . . . [T]hese affidavits make a *fact issue* that those propositions are true. *For purposes of reviewing the summary judgment* which our panel's opinion affirms, then, the *propositions stated must be taken as established: there are two bona fide views.*[23]

Thus, the dissent objected to a lower court tendency, which is too widespread, to render and sustain summary judgment in direct contradiction to procedural rules.[24]

Judicial self-restraint demands a *procedural reversal*, under uniform precedent: "normally the Court will not decide a constitutional question if there is some other ground."[25]

1. *Uncontroverted Affidavits on Factual Issues*

a. Conclusive Effect. The panel and district court both *totally ignored* the content of the State's uncontroverted affidavits. However, the uniform rule of all circuits is that uncontroverted affidavits[26] must be "accept[ed] as true" (in Justice Stevens' words) and "admitted"[27] for purposes of summary judgment and appeal, and thus must be conclusive of factual issues. A typical holding is as follows:

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[23] Aguillard v. Edwards, 778 F.2d at 226 (emphasis added).

[24] *See generally* 6 (pt. 2) MOORE'S FEDERAL PRACTICE ¶ 56.02[1] (2d ed. 1982).

[25] Escambia County v. McMillan, 466 U.S. 48, ___ (1984). *Accord*, Gulf Oil Co. v. Bernard, 452 U.S. 89, 99 (1981).

[26] *Infra* note 53 (reprinted as App. B to Brief).

[27] Wang v. Lake Maxinhall Estates, Inc., 531 F.2d 832, 835 n.10 (7th Cir. 1976); Morrison v. Walker, 404 F.2d 1046, 1048-49 (9th Cir. 1969) ("If facts stated in the affidavit of the moving party for summary judgment are not contradicted by facts stated in the affidavit of the party opposing the motion, they are *admitted*."). *Accord, e.g.*, McPherson v. Rankin, 736 F.2d 175, 178 (5th Cir. 1984) (as part of viewing matters favorably to the opposing party, "the factual recitals in the opponent's *affidavit* . . . must be *regarded as true* for the purposes of this appeal"); Jones v. Wike, 654 F.2d 1129, 1130 (5th Cir. 1981); Jones v. Halekulani Hotel, Inc., 557 F.2d 1308, 1310 (9th Cir. 1977); Paton v. La Prade, 524 F.2d 862, 871 (3d Cir. 1975) ("These affidavits . . . may not be disregarded on a motion for summary judgment."); Port Laudania Terminal, Inc. v. Barge Sun Coaster, 453 F.2d 1308 (5th Cir. 1972); Southern Rambler Sales, Inc. v. American Motors Corp., 375 F.2d 932, 937 (5th Cir.), *cert. denied*, 389 U.S. 832 (1967) ("Meet these affidavit facts or judicially die."); Gauck v. Meleski, 346 F.2d 433 (5th Cir. 1965) (uncontradicted affidavit must be accepted as true on summary judgment); *see* Dickinson v. United States, 346 U.S. 389, 396-97 (1953);

> The facts in the defendant's affidavits are *taken as true* when the plaintiff files no counter-affidavits. Foster v. General Motors Corp., 7 Cir., 1951, 191 F.2d 907, certiorari denied 343 U.S. 906, 72 S.Ct. 634, 96 L.Ed. 1324; Winrod v. McFadden Publications, D.C.N.D. Ill. 1945, 62 F.Supp. 249, affirmed 7 Cir., 187 F.2d 180; Seward v. Nissen, D.C.D. Del. 1942, 2 F.R.D. 545.[28]

b. Lower Court Error. The facts established by the State's uncontroverted affidavits, and the directly contradictory judicial notice effectively taken by the appellate panel and district court, are sketchily summarized as follows:

State's Uncontroverted Affidavit Resolution of Factual Issues	*Panel Decision's Judicial Notice of Factual Issues*
a. *Definition*: "Creation-science means origin through abrupt appearance in complex form of biological life, life itself, and the physical universe. . . . Creation-science consists of scientific data and . . . not . . . any religious doctrine of origin such as the Genesis account . . ..."[29]	"We must recognize that the theory of creation is a religious belief." "the origin of mankind . . . creation science" "the theory of creation is a religious belief" ". . . creationism, a religious belief."[33]
b. *Non-Religious*: "[C]reation-science is not religious. . . . The concept of creation is not inherently religious and is non-religious when defined as abrupt appearance in complex form."[30]	"We approach our decision in this appeal by recognizing that, irrespective of whether it is fully supported by scientific evidence, the theory of creation is a religious belief." "We must recognize that the theory of creation is a religious belief."[34]

Western Transp. Co. v. Wilson & Co., 682 F.2d 1227 (7th Cir. 1982); *see* Adickes v. S.H. Kress & Co., 398 U.S. at 161.

[28] Carver v. Liberty Mutual Ins. Co., 277 F.2d at 109. *Accord, supra* note 27.

[29] Affidavit of Miethe at 3 (R.D. 77 Ex. 3, R.544), App. B(3) to Brief; *infra* note 50.

[30] Affidavit of Most* at 2 (*id.*), App. B(4) to Brief; *infra* note 61.

[31] Affidavit of Morrow* at 2-3 (*id.*), App. B(2) to Brief; *infra* note 77.

[32] Answer ¶ B(17) (R.546), J. A. D ¶ B(17); *infra* Section II(B)(1).

c. *Scientific*: "[C]reation-science is scientific, non-religious, and educationally worthwhile. . . . It is affirmative scientific evidence that supports creation-science . . .."[31]	"[I]rrespective of whether it is fully supported by scientific evidence, the theory of creation is a religious belief."[35]
d. *Secular Legislative Purpose*: "The Balanced Treatment Act has a constitutional legislative purpose . . . of advancing academic freedom, as indicated in the statutory language and the official legislative history." [Answer][32]	"Although the record here reflects self-serving statements made in the legislative hearings by the Act's sponsor and supporters, this testimonial avowal of secular purpose is not sufficient . . .." "[I]t has no secular legislative purpose."[36]

No authority whatsoever was cited in the panel decision or district court for these factual determinations by judicial notice, even though they directly conflict with the plethora of authority cited by the State and with the uncontroverted

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[33] Aguillard v. Edwards, 765 F.2d at 1256, 1253, 1256, 1257. *Accord*, Aguillard v. Treen, No. 81-4787, slip op. at 6 (E.D. La. Jan. 10, 1985) (Supplemental App. to Jurisdictional Statement) (It is "tenets of a particular religious sect.").

[34] *Id.* at 1253, 1256. *Accord*, Aguillard v. Treen, slip op. at 5 (emphasis added) (" 'Creation,' as the term is used in the statute, *involves religion*, and the teaching of 'creation-science' and 'creationism,' as contemplated by the statute, involves teaching 'tailored to the principles' of a particular religious sect or group of sects. . . . *As it is ordinarily understood*, the term 'creation' means the bringing into existence of mankind and of the universe and *implies a divine creator*. While all religions may not teach the existence of a supreme being, a belief in a supreme being (a creator) is *generally considered* to be a religious tenet.").

[35] *Id.* at 1253. *Accord*, Aguillard v. Treen, slip op. at 3-5 (emphasis added) ("There is no doubt that the defendants could produce a great deal of evidence on *collateral issues*, as did the proponents of a similar Arkansas statute . . .. We are convinced that *whatever that evidence would be*, it could not affect the outcome. . . . Defendants contend that summary judgment is precluded by the presence of at least one genuine *issue of material fact*, the *definition of 'science.'* We decline the invitation to judge that debate.").

[36] *Id.* at 1256, 1257. *Accord*, Aguillard v. Treen, slip op. at 4-7 (emphasis added) ("Both sides seek comfort from recorded statements of proponents and opponents, from various committee hearings, from drafts of earlier proposals and bills, and from amendments to the original bill before it was finally enacted. . . . All of *this 'history' is of little or no effect*. . . . [T]he *sole reason* why the Louisiana legislature would require the teaching of creationism is that it comports with the same *religious* doctrine. *There can be no legitimate secular reason* for the 'Balanced-Treatment for Creation-Science and Evolution-Science Act.' ").

(and only) affidavits in the case. These material factual issues are further discussed in Section I(E), *infra*.

2. *Other Factual Issues and the Most Favorable Light*

a. Lower Court Error. The panel and district court both *improperly resolved* the scores of "genuine issues of material fact" such as the definition, non-religious nature, scientific nature, and secular legislative purpose for balanced treatment, as discussed *supra*.[37] These improper factual determinations by judicial notice all contradicted the State's hard evidence such as its uncontroverted affidavits, answer, and other factual assertions.[38]

The panel and district court also *absolutely failed* to view the State's other factual assertions "in the light most favorable to the opposing party" (the State), and to place the "burden of showing the absence of a genuine issue as to any material fact" on "the moving party" (the appellees).[39] In actuality, the panel and district court totally ignored the State's factual assertions.

b. Scope of Factual Issues. The definition and the non-religious or religious nature of a disputed matter are factual issues, as has been generally held or assumed by Establish-

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[37] *Supra* pp. 8-9 & nn. 33-36.

[38] These are found in the following places in the record:

Factual Issue re Creation-Science	*State's Affidavits*	*State's Memorandum*	*State's Answer*
	(R.544, R.D. 77 Ex., App. B to Brief §§)	(R.543, R.D. 77, J. A. at G-)	(J. A. D, R. 546 ¶¶)
a. *Definition*:	1-5, esp. 1-2	34-56	A1, B14
b. *Non-Religious*:	1-5, esp. 1, 3-4	724-901	A1, B13-15
c. *Scientific*:	1-5, esp. 1-3	57-723	A1, B16
d. *Educational*:	1-5, esp. 5	902-49	A1, B16
e. *Secular Purpose*:		986-1021	A1, B12 & 17

[39] Adickes v. S.H. Kress & Co., 398 U.S. 144, 157 (1970) (emphasis added). *Accord, e.g.*, Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. ___, 89 L.Ed.2d 538, 553 (1986); United States v. Diebold, Inc., 369 U.S. 654, 655 (1962); 10A C. Wright, A. Miller & M. Kane, Federal Practice and Procedure § 2723, at 68 (1983).

ment Clause decisions of this Court[40] and the appellate courts.[41] For example, this Court reversed summary judgment on the religious nature of a sectarian school's instruction as follows:

> Against this background of judgment and experience, unchallenged in the meager record before us in this case, we cannot agree with appellants either that all teaching in a sectarian school is *religious* or that the processes of secular and religious training are so intertwined that secular textbooks furnished to students by the public are *in fact instrumental in the teaching of religion.* This case comes to us after *summary judgment* entered on the pleadings. Nothing in this record supports the proposition that all textbooks, whether they deal with mathe-

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[40] *E.g.*, Hunt v. McNair, 413 U.S. 734, 746-47 & n.8 (1973) (treating religious nature of building use by church-related colleges as factual issue); Tilton v. Richardson, 403 U.S. 672, 680-82 (1971) (same); Board of Educ. v. Allen, 392 U.S. 236, 248 (1968) (treating religious nature of sectarian school as factual issue and reversing summary judgment); *see* Larson v. Valente, 456 U.S. 228, 234 n.6 & 236 (1982) (lower court denied summary judgment on issue of religious nature of Unification Church).

[41] *E.g.*, School Dist. of Abington Township v. Schempp, 374 U.S. 203, 223 (1963), *aff'g* 201 F. Supp. 815 (E.D. Pa. 1962) (3 judge ct.) (treating religious nature of Bible reading as factual); Brown v. Dade Christian Schools, Inc., 556 F.2d 310, 314 (5th Cir. 1977) (en banc), *cert. denied*, 434 U.S. 1063 (1978) (religious nature of a matter is "a question of fact"); EEOC v. Southwestern Baptist Theological Seminary, 651 F.2d 277, 279, 286 (5th Cir. 1981), *cert. denied*, 456 U.S. 905 (1982) (finding in Part I, captioned "Facts," "that the Seminary is wholly sectarian"); Hall v. Board of School Comm'rs, 656 F.2d 999, 1001-02 (5th Cir. 1981) ("findings of fact" about religious nature of public school activities); Meltzer v. Board of Pub. Instruction, 548 F.2d 559, 565 *passim* (5th Cir. 1977), *aff'd in relevant part en banc*, 577 F.2d 311 (5th Cir. 1978) (same); Roemer v. Board of Pub. Works, 426 U.S. 736, 755 (1976) (plurality), *aff'g in relevant part* 387 F. Supp. 1282 (D. Md. 1974) (3 judge ct.) (under category "Findings of Fact," finding of non-religious nature of school); DiCenso v. Robinson, 316 F. Supp. 112 (D.R.I. 1970) (3 judge ct.), *aff'd sub nom.* Lemon v. Kurtzman, 403 U.S. 602 (1971) (treated religious nature of church school aid as factual issue); Schempp v. School Dist. of Abington Twp., 201 F. Supp. 815 (E.D. Pa. 1962) (3 judge ct.), *aff'd*, 374 U.S. 203 (1963) (same for Bible reading); Zorach v. Clauson, 198 Misc. 631, 99 N.Y.S.2d 399, 350 (1950), *aff'd*, 343 U.S. 306 (1952) (treated issues of advancing religion as "facts"); Long v. Parker, 390 F.2d 816, 821-22 (3d Cir. 1968) (reversed summary judgment because *inter alia* religious nature of periodical "Muhammad Speaks" is a factual issue).

matics, physics, foreign languages, history, or literature are used by the parochial schools to teach religion.[42]

The tripart test prongs also generally embody material factual issues: the legislative purpose,[43] the primary effect,[44] and nonexcessive entanglement.[45] The sole exceptions are cases in which the definition or the religious nature of a disputed matter have been resolved by this Court, such as the religious nature of compulsory prayer or Bible reading in public school classes. In this case, the legal issues are inextricably interwoven with the factual issues, and no decision of this Court directly resolves those issues.

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[42] Board of Educ. v. Allen, 392 U.S. 236, 248 (1968).

[43] *E.g.*, *see* Lynch v. Donnelly, 465 U.S. 668, 680 (1984); Roemer v. Board of Pub. Works, 426 U.S. at 755, *aff'g* 387 F. Supp. at 1293; Hunt v. McNair, 413 U.S. 734, 741-42 (1973); Tilton v. Richardson, 403 U.S. 672, 678-82 (1971); Walz v. Tax Comm'n, 397 U.S. 664, 672-74 (1970); McGowan v. Maryland, 366 U.S. 420, 444-45 (1961); Roemer v. Board of Pub. Works, 387 F. Supp. 1282, 1293 (D. Md. 1974) (3 judge ct.), *aff'd*, 426 U.S. 736 (1976) (plurality op.) (describing legislative purpose as a "factual question" and categorizing under "Findings of Fact"); Otero v. N.Y. City Housing Authority, 484 F.2d 1122 (2d Cir. 1973) (reversing summary judgment because of factual issue whether purpose religious); Allen v. Hickel, 424 F.2d 944 (D.C. Cir. 1970) (same); *cf.* 6 (pt. 2) MOORE'S FEDERAL PRACTICE, *supra* note 24, at ¶ 56.17[41.-1] ("summary judgment is likely to be inappropriate when issues of motive, intent, and other subjective feelings and reactions are material"); C. WRIGHT, A. MILLER & M. KANE, *supra* note 39, at § 2730.

[44] *E.g.*, *see* Meek v. Pittenger, 421 U.S. 349, 364-66 (1975); Tilton v. Richardson, 403 U.S. 672, 682-84 (1971); Board of Educ. v. Allen, 392 U.S. at 245-48; McGowan v. Maryland, 366 U.S. at 444-49; Roemer v. Board of Pub. Works, 387 F. Supp. at 1292, 1297, *aff'd*, 426 U.S. 736 (1976) (plurality op.) (placing findings on primary effect in category "Findings of Fact"); DiCenso v. Robinson, 316 F. Supp. 112 (D.R.I. 1970) (3 judge ct.), *aff'd sub nom.* Lemon v. Kurtzman, 403 U.S. 602 (1971) (treating effect as factual issue); Zorach v. Clauson, 198 Misc. 631, 99 N.Y.S.2d 339, 350 (1950), *aff'd*, 343 U.S. 306 (1952) (same); Allen v. Hickel, 424 F.2d 944 (D.C. Cir. 1970) (reversing summary judgment on primary effect and legislative purpose).

[45] *E.g.*, Grutka v. Barbour, 549 F.2d 5, 8 (7th Cir. 1977), *cert. denied*, 431 U.S. 908 (1977) ("entanglement attacks can only be measured against a factual record"); Roemer v. Board of Pub. Works, 387 F. Supp. at 1292, 1297, *aff'd*, 426 U.S. 736 (1976) (categorizing findings on entanglement as "Findings of Fact"); Meek v. Pittenger, 374 F. Supp. at 651, *aff'd in relevant part*, 421 U.S. 349 (1975) ("it seem[s] clear to us that a decision on the entanglement criterion will in most if not all cases *require a factual inquiry* rather than a resort to examination of the fact of the statute in issue or to judicial notice about how it may be expected to operate.") (emphasis added).

B. Creation-Science Consists of Scientific Evidence and Not Religious Concepts, and Evolution Is No More Scientific or Non-Religious than Creation-Science, as Specifically Circumscribed by the Louisiana Balanced Treatment Act, as Settled for Purposes of Appeal by the State's Uncontroverted Affidavits, as Settled for Purposes of Appeal by the State's Documented Factual Assertions When Viewed in the Most Favorable Light, and as Recognized by the Seven Dissenting Judges on the Closely-Split U.S. Court of Appeals for the Fifth Circuit.[46]

1. *Creation-Science and Factual Issues**

The impassioned seven-judge dissent, from the *en banc* Fifth Circuit of the U.S. Court of Appeals below, specifically found that creation-science is scientific and non-religious:

> The statute which concerns us today is quite different: it has *no direct religious reference whatever* and *merely requires that the whole scientific truth be taught* on the subject if any is.[47]
>
> . . . .
>
> That was to provide, as my summary of the statute indicates, that neither evolution nor creation be presented as finally established scientific fact and that when evolution is taught as a theory, the *scientific evidence* . . . for the sudden appearance of highly developed forms of life be given equal time (and vice versa). As I noted at the outset, the record contains *affidavits*—some of them by highly-qualified scientists who there proclaim themselves agnostics and believers in evolution as a the-

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[46] In fact, the appellees judicially admitted that these are disputed material factual issues in their brief in the parallel lawsuit between virtually identical parties. Pretrial Brief of Defendants at i *passim*. Keith v. Louisiana Dep't of Educ., 553 F. Supp. 295 (M.D. La. 1982); R. Excerpts § 9 (R.D. 73 § 9).

*Note: Scientists and other experts and treatises cited in Section I(B)(1) are almost all evolutionists, as indicated by an asterisk.

[47] Aguillard v. Edwards, 778 F.2d at 227 (emphasis added).

> ory—which affirm that the above propositions are correct . . .. At the least, these affidavits make a *fact issue* that those propositions are true. For purposes of reviewing the summary judgment which our panel's opinion affirms, then, the *propositions stated must be taken as established: there are two bona fide views.*
>
> It follows that the Louisiana statute requires no more than that neither theory about the origins of life and matter be misrepresented as fact, and that if *scientific evidence supporting either view* of how these things came about be presented in public schools, *that supporting the other* must be—so that within the reasonable limits of the curriculum, the subject of origins will be discussed in a balanced manner if it is discussed at all. . . .[48]

Yet the appellate panel and district court premised their rulings on an assumption, without citations, that "the theory of creation is a religious belief."[49]

a. Creation-Science Is Properly Defined as Scientific and Non-Religious.[50] The Balanced Treatment Act defines creation-science as "scientific evidences" rather than religious concepts,[51] and its official legislative history specifically and repeatedly affirms that creation-science is scientific and not religious.[52] The uncontroverted affidavits[53] of impressive expert witnesses[54] established that "[c]reation-science means origin through abrupt appearance in complex form of biological life, life itself, and the physical universe," and that "creation" in this context means simply "abrupt appearance in complex form."[55] The seven dissenting judges similarly referred to creation-science as "the scientific evidence . . . for the sudden appearance of highly developed forms of life."[56] In addition to the affidavits, the State's factual assertions affirm the correct non-religious definition of creation-science.[57] Each aspect of creation-science[58] consists of affirmative scientific evidences and related scientific interpretations, which are summarized at pages 19-21 *infra*. In fact, "creation" as a scientific term was so defined over a century ago by such scientists as Professor Louis Agassiz of Harvard, who was "America's leading biologist"[59] as well as the leading creationist scientist of his time.[60]

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[48] *Id.* at 226 (emphasis added).

[49] Aguillard v. Edwards, 765 F.2d at 1253. *Accord*, *id.* at 1253, 1256, 1257; *supra* note 34.

[50] For a comprehensive discussion, see Mem. of Defendants at 24-30 (R.D. 77, R.543), J. A. at G44-G56; Affidavits of Kenyon, Morrow*, Miethe, Most*, & Clinkert (R.D. 77 Ex. 1-5, R.544), App. B(1)-(5) to Brief; Answer ¶ A(13) (R.546), J. A. D ¶ A(13).

[51] La. Rev. Stat. § 17:286.3.

[52] Section II(B)(1) *infra*. There are several *misconceptions* about creation-science. It does *not* essentially involve creation "from nothing," "kinds" of plants or animals, "catastrophism" or a "worldwide flood," or a "relatively recent inception" of the universe and life.

[53] R.D. 77 Ex. 1-5, R.544 (reprinted as App. B to Brief). The expert witnesses who provided affidavits are Dr. Dean H. Kenyon (Science), Professor of Biology at San Francisco State U. (Ph.D. from Stanford U. in biophysics); Dr. W. Scot Morrow* (Science), Associate Professor of Chemistry at Wofford C. (Ph.D. from U.N.C. in biochemistry); Dr. Terry L. Miethe (Philosophy & Theology) (Ph.D. from St. Louis U. in philosophy, Ph.D.

b. Creation-Science Is Non-Religious.[61] Creation-science is *non-religious*, and in fact is *as non-religious* as evolution.

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from U. Southern Calif. in theology); Fr. Dr. William G. Most* (Theology), Professor of Theology & Classics at Loras C. (Ph.D. from Catholic U. in classics); and Dr. Robert J. Clinkert (Education), Public School Assistant Supt. for Instruction (Ph.D. from Loyola U. in education).

[54] The State's expert witnesses have earned doctorates and professorships in philosophy, theology, biology, chemistry, physics, education, and history. Their doctorates are from institutions including Cambridge, Yale, and Stanford. They include evolutionist as well as creationist scientists, and span the spectrum of personal belief from Protestant to Catholic to Jewish to non-Judeo-Christian to Agnostic.

[55] Affidavit of Miethe at 3, 5 (R.D. 77 Ex. 3, R.544; App. B(3) to Brief). *Accord*, Affidavits of Kenyon at 2-3 (*id.* Ex. 1), Morrow* at 2 (*id.* Ex. 2), Clinkert at 2 (*id.* Ex. 5).

[56] 778 F.2d at 226.

[57] R.D.77 & R.546.

[58] The three aspects, parallel to those of evolution, are biological creation (of organisms), biochemical creation (of the first life), and cosmic creation (of the universe).

[59] *E.g.*, Gould*, *Catastrophes and Steady State Earth*, NATURAL HISTORY, Feb. 1975, at 15, 15-16.

[60] *E.g.*, 3 L. AGASSIZ, CONTRIBUTIONS TO THE NATURAL HISTORY OF THE UNITED STATES (1861), *excerpted in* 30 AM. J. OF SCIENCE 142, 149 (1860).

[61] For a comprehensive discussion, see Mem. of Defendants at 393-488 (R. D.77, R.543), J. A. at G724-G901; Affidavits of Morrow, Miethe & Most

The State's uncontroverted affidavits stated the following, settling it for purposes of summary judgment and appeal, by a non-creationist expert:

> My professional opinion is that creation-science is *not religious*. It appears to me to be scientific.
>
> . . . .
>
> The concept of *creation is not inherently religious and is non-religious* when defined as abrupt appearance in complex form. The concept of a creator is also not inherently religious, although it can be stated in religious terms; and it is not religious in its relation to creation-science. Creation-science is no more supportive of religious concepts of a creator or other religious doctrines than evolution is in its theistic evolutionist formulations.[62]

The term "*creation*," both in philosophical and scientific usage, is non-religious and scientific in signifying an "abrupt appearance."[63] It so appears in the writings of leading proponents of the big bang,[64] inflationary universe,[65] and continu-

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(R.D. 77 Ex. 2-4, R.544), App. B(2)-(4) to Brief; Answer ¶¶ B(13)-B(14) (R.546), J. A. D ¶¶ B(13)-(14).

[62] Affidavit of Most* at 2 (emphasis added) (R.D. 77 Ex. 4, R.544; App. B(4) to Brief). *Accord*, Affidavits of Kenyon at 2 (*id*. Ex. 1), Morrow* at 2 (*id*. Ex. 2), Miethe at 2-3, 4-5 (*id*. Ex. 3), Clinkert at 2 (*id*. Ex. 5).

[63] *E.g.*, Leslie*, *Cosmology, Probability, and the Need To Explain Life*, in Scientific Explanation and Understanding 53, 56 (N. Rescher* ed. 1983); N. Gillespie*, Charles Darwin and the Problem of Creation 32 (1979) ("the conventional practice of using the term creation as a synonym for 'appear' or 'originate' "); *id*. at 158 n.10 (same); 2 The Life and Letters of Charles Darwin 202-03 (F. Darwin* ed. 1903) ("creation, by which I really meant 'appeared' "); *supra* note 55; *see* C. Darwin*, The Origin of Species 486 (1859, repr. 1964) ("Our classifications will come to be . . . genealogies; and will truly give what may then be called the plan of creation.").

[64] *E.g.*, G. Gamow*, The Creation of the Universe 20 (1955) ("cosmogony can be formulated as an attempt to reconstruct the evolutionary process which led from simplicity of the early days of creation to the present immense complexity"); J. Trefil*, The Moment of Creation: Big Bang Physics (1983); J. Silk*, The Big Bang 144 (1979) ("the singularity when creation of matter possibly occurred"); Trefil*, *Matter vs. Antimatter*, Science 81, Sept. 1981, at 66, 66 ("One argument is that more matter than antimatter was created during the Big Bang").

[65] Tryon*, *What Made the World?*, New Scientist, Mar. 8, 1984, at 14, 16 ("I proposed that our Universe had been created spontaneously from

ous creation hypotheses[66] about the origin of the universe, of directed panspermia advocates about the origin of the first life, and of others about the origin of organisms.[67] The concept of creation also is a vital part of some clearly scientific viewpoints, such as the directed panspermia and continuous creation hypotheses,[68] and such as Ambrose's and Heribert-Nilsson's approaches, all of which firmly reject *Genesis*.[69]

Further, the concept of a *creator* is not a necessary part of presenting creation-science and is not central to creation-science in any event, because the empirical evidence that constitutes creation-science indicates occurrences of creation but not the sources or causes of those occurrences.[70] Just as evolution cannot resolve and often does not address the question of

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nothing (*ex nihilo*), as a result of established principles of physics."—inflationary universe hypothesis); Guth* & Steinhardt*, *The Inflationary Universe*, Scientific Am., May 1984, at 116, 128 ("the actual creation of the universe is describable by physical laws" and is "from absolutely nothing").

[66] H. Bondi*, Cosmology 143 (1968) ("the continual creation of matter"); F. Hoyle*, The Nature of the Universe 124 (1950) ("Continuous creation, on the other hand, can be represented by mathematical equations . . . and compared with observation.").

[67] *E.g.*, F. Hoyle & N. Wickramasinghe, Evolution from Space: A Theory of Cosmic Creationism (1984); F. Hoyle, The Intelligent Universe: A New View of Creation and Evolution (1984); Raloff*, *They Call It Creation Science*, Science News, Jan. 16, 1982, at 44, 46 (Quoting Dr. N. Chandra Wickramasinghe [Chairman of Dep't of Applied Mathematics, University College at Cardiff]: "But the general concept of creation, that could be separated from the theological arguments, was one that I felt some sympathy for." The author quotes Dr. Wickramasinghe as "raised a Hindu" who now "doesn't even share the basic premise of the Christian faith, much less the Christian fundamentalists' trust in . . . the book of Genesis . . ..").

[68] *Supra* notes 67 & 66.

[69] *E.g.*, E. Ambrose*, The Nature and Origin of the Biological World 143 (1982) ("We conclude therefore that recent hypotheses about the origin of species fall to the ground, unless it is accepted that an intensive input of new information is introduced . . .. This can be explained in terms of the operation of creative intelligence."); Gray*, *Alternatives in Science: The Secular Creation of Heribert-Nilsson*, Kronos, Summer 1982, at 8, 8, 13-14 ("a strictly secular theory of special creation has been worked out in some detail by a fully certified academic biologist").

[70] *E.g.*, Etkin, *Science and Creation*, in Challenge: Torah Views on Science and Its Problems 241, 250-51 (rev. ed. 1978) (by former professor

who or what originated matter and energy in the cosmos and what mechanism brought about macroevolution, creation-science does not properly address the question of the source or cause of creation. The noncentrality of a creator to creation-science is evident in the absence of a creator from definitions of "creation" given by several public school textbooks produced by secular national publishers.[71] In fact, the role of a creator in evolutionist writings and thought is greater than in creation-related writings and thought.[72] Moreover, the concept of a creator is not necessarily religious, but often is philosophical or metaphysical instead.[73] In any event, reference to creation or even to a creator does not bring violation of the Establishment Clause, as discussed in Section II(A) *infra*.

This Court has defined *"religion"* as involving an "ultimate concern,"[74] and as *not* being centered in and *not* even requiring belief in God or a Supernatural Being.[75] Creation-science

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of biology at Columbia and Chicago); *see* V. Webster* et al., Life Science 41-42 (1980).

[71] E.g., V. Webster* et al., *supra* note 70, at 409, 436-37, 441-42, 444.

[72] *E.g.*, Provine*, *Implications of Darwin's Ideas on the Study of Evolution*, 32 BioScience 501, 506 (1982); C. Darwin*, The Origin of Species 343, 753, 757, 758, 759 *passim* (variorum ed. M. Peckham* 1959) (Darwin's references to a "Creator").

[73] *E.g.*, Quinn*, *The Philosopher of Science as Expert Witness*, in Science and Reality: Recent Work in the Philosophy of Science 32, 39-40 (J. Cushing*, C. Delaney* & G. Gutting* eds. 1984) ("that concept is used in purely theoretical discussions in works of metaphysics that have no tendency to promote or advance religious belief"); F. Copleston*, A History of Philosophy 317 (1946) (Aristotle's "First Unmoved Mover"); Leslie*, *Anthropic Principle, World Ensemble, Design*, 19 Am. Philos. Q. 141, 141 (1982) ("calling it evidence of Design . . . does not always indicate belief in a Designer"; a "creative force").

[74] *E.g.*, United States v. Seeger, 380 U.S. 163, 187 (1965) (construction of term "religion" in statute); Choper, *Defining "Religion" in the First Amendment*, 1982 U. Ill. L. Rev. 579, 594-604 (suggesting "ultimate concerns," "extratemporal consequences," or "transcendent reality").

[75] *E.g.*, Torcaso v. Watkins, 367 U.S. 488, 495 & n. 11 (1961) (nontheistic religions); Everson v. Board of Educ., 330 U.S. 1, 16 (1947) (protection of "Non-believers"); *see* Gillette v. United States, 401 U.S. 437, 443 (1971) (Free Exercise Clause); Welsh v. United States, 398 U.S. 333 (1970) (statutory construction); United States v. Seeger, 380 U.S. at 166 (same, ethical creed with skepticism toward existence of God).

simply does *not* constitute such an "ultimate concern" or religious belief system. Similarly, it lacks all or certainly most of the characteristics of religion in philosophical definitions, such as in the *Encyclopedia of Philosophy* and *Encyclopaedia Britannica,* as well as in the *Oxford English Dictionary.*[76]

c. Creation-Science Is Scientific.[77] *Creation-science* is *scientific,* and in fact is *as scientific* as evolution.[78] The State's uncontroverted affidavits, in addition to the State's multitude of authorities cited in factual assertions, contain many examples such as the following:[79]

> I am not a creationist or a religious Fundamentalist, and instead am an evolutionist and Agnostic. My conclusions are that creation-science is *scientific,* non-religious, and educationally worthwhile in comparison with evolution. It can be taught and can be presented in a textbook *without any religious content.* It is affirmative *scientific evidence* that supports creation-science, and the evidence is not compellingly persuasive that supports evolution.
>
> . . . .
>
> Creationist scientists offer several areas of what can properly be called affirmative evidence and analysis

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[76] *E.g.*, Alston*, *Religion*, in 7 ENCYCLOPEDIA OF PHILOSOPHY 140, 141-42 (P. Edwards* ed. 1967); Ramsey*, *Religion, Philosophy of*, in 15 ENCYCLOPAEDIA BRITANNICA 592, 594 (15th ed. 1974); *Religion*, 8 OXFORD ENGLISH DICTIONARY 410 (1933, 1970).

[77] For a comprehensive discussion, see Mem. of Defendants at 31-392 (R.D. 77, R.543), J. A. at G57-G723; Affidavits of Kenyon, Morrow, & Miethe (R.D. 77 Ex. 1-3, R.544), App. B(1)-(3) to Brief; Answer ¶ B(16) (R.546), J. A. D ¶ B(16).

[78] The State is not seeking to argue in this case that creation-science is ultimately correct or that evolution is ultimately false, but simply that balanced treatment of both scientific explanations is constitutional, because creation-science is legitimately scientific and non-religious whereas evolution is not conclusive fact. The State agrees wholeheartedly that public schools constitutionally may not and should not teach the *Genesis* account of creation or religious views of evolution in science classes.

[79] *See generally* Mem. of Defendants at 36-92, 194-211, 250-68 (R.D. 77, R. 543), J. A. at G66-G168, G356-G387, G457-G490; Answer ¶¶ A(1) & B(16) (R. 546), J. A. D ¶¶ A(1) & B(16).

> . . . . These involve *scientific data* and do *not involve religious concepts.*[80]

An Agnostic physicist, to whom creation-science is "anathema," recently concluded that the "experimental evidence" actually better supports it than evolution:

> I think however that we must go further than this and admit that *the only acceptable explanation is creation*. I know that this is anathema to physicists, as indeed it is to me, but we must not reject a theory that we do not like if the *experimental evidence supports it.*[81]

The issue is *not* which explanation is correct, but whether a legislature might for secular reasons conclude that both are sufficiently scientific and non-religious that they both should be taught to protect academic freedom by offering the "whole scientific truth."

The *affirmative scientific evidence* of which creation-science consists is in such fields as paleontology, morphology, information science, probability, genetics, and classification.[82] For example, the paleontology argument for biological creation is based on two empirical facts that the fossil record generally reflects: the abrupt appearance of fossil categories of complex organisms and the systematic gaps between different categories of fossil organisms. These facts are acknowledged by many evolutionist scientists, such as Gould* of Harvard and Raup* of the Field Museum:

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[80] Affidavit of Morrow* at 2-3 (R.D. 77 Ex. 2, R.544, App. (B)(2) to Brief) (emphasis added). *Accord*, Affidavits of Kenyon at 2, 3-14 (*id*. Ex. 1), Miethe at 3-4 (*id*. Ex. 3), Clinkert at 2 (*id*. Ex. 5).

[81] Lipson*, *A Physicist Looks at Evolution*, 31 PHYSICS BULL. 138, 138 (1980) (emphasis added) (App. D to Brief).

[82] Biological creation, for example, includes the following affirmative evidence: (a) paleontology argument of fossil record of systematic abrupt appearance and systematic gaps; (b) comparative morphology argument of systematic similarity between fossil organisms and their modern counterparts, and of systematic stasis; (c) information content argument about vast information, in complex molecules and organs; (d) probability argument concerning the high probability of biological creation of complex organisms, complex molecules, and symbiotic relationships; (e) genetics argument on the genetic limits on biological change; (f) comparative unrelatedness argument about systematic anomalies in classification, anatomy, and biochemistry.

> New species almost always *appeared suddenly* in the fossil record with *no intermediate links* to ancestors in older rocks of the same region.[83]
>
> Unfortunately, the origins of most higher categories are shrouded in mystery; commonly new higher categories *appear abruptly* in the fossil record *without* evidence of *transitional ancestral forms.*[84]

In fact, some evolutionists have conceded that this fossil record is an affirmative scientific evidence for creation:

> Rather than supporting evolution, the *breaks* in the known fossil record *support the creation* of major groups with the possibility of some limited variation within each group.[85]

Hundreds of similar scientific citations can be and were given for the other elements of creation-science.[86]

2. *Evolution and Factual Issues**

The Fifth Circuit opinion of the seven dissenting judges recognized the noncompelling scientific nature and parallel religious (or anti-religious) nature [87] of evolution and creation-science as follows:

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[83] *E.g.*, Gould*, *Evolution's Erratic Pace*, Natural History, May 1977, at 12, 12 (emphasis added). *Accord*, *id.* at 14 (emphasis added) ("The *extreme rarity of transitional forms* in the fossil record persists as the *trade secret* of paleontology.").

[84] *E.g.*, D. Raup* & S. Stanley*, Principles of Paleontology 382 (2d ed. 1978) (emphasis added). *Accord*, G. Simpson*, The Major Features of Evolution 360 (1953) (emphasis added) ("In spite of these examples, it remains true, as every paleontologist knows, that *most* new species, genera, and families and that *nearly all* new categories above the level of families *appear in the record suddenly* and are *not* led up to by known, gradual, completely continuous *transitional sequences*.").

[85] A. Thompson*, Biology, Zoology, and Genetics: Evolution Model vs. Creation Model 2, 76 (1983) (emphasis added). *Accord*, Clark*, *Animal Evolution*, 3 Quarterly Rev. of Biology 523, 539 (1928) (curator of paleontology at the Smithsonian Institution) ("On the basis of the paleontological record, the creationist has the better of the argument.").

[86] *Supra* note 77.

*Note: Scientists and other experts and treatises cited in Section I(B)(2) are almost all evolutionists, as indicated by an asterisk.

[87] The seven judges noted that some people "were hostile to having the theory of evolution misrepresented to school children as established scientific fact and who wished the door left open to acceptance by these children of the Judeo-Christian religious doctrine of Divine Creation. If so, however,

> As I noted at the outset, the record contains affidavits—some of them by highly-qualified scientists who there proclaim themselves agnostics and believers in evolution as a theory—which affirm that the above propositions are correct: that *evolution is not established fact* and that there is strong evidence that life and the universe came about in a different manner, one perhaps less inconsistent with religious doctrine. . . . For purposes of reviewing the summary judgment which our panel's opinion affirms, then, the propositions stated above must be taken as established . . ..[88]

a. Evolution Is Properly Defined To Include Macroevolution, Etc.[89] Evolution, like creation-science, addresses the origin and development of organisms, life, and the universe.[90] Biological evolution includes "common ancestry" of all organisms[91]—or macroevolution—which involves evolution "from primordial life, through unicellular and multicellular organisms, invertebrate and vertebrate animals, to man . . .."[92]

b. Evolution and Creation-Science Are Comparably Non-Religious.[93] Evolution and creation-science, while both are scientific explanations, are comparably "consistent" or

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they did not seek to further their aim by requiring that religious doctrine be taught in public school." Aguillard v. Edwards, 778 F.2d at 226. *Accord, id.* at 228. In *Epperson*, Justice Black made a similar point. Epperson v. Arkansas, 393 U.S. 97, 113 (1968).

[88] Aguillard v. Edwards, 778 F.2d at 226 (emphasis added).

[89] For a comprehensive discussion, see Mem. of Defendants at 18-23 (R.D. 77, R.543), J. A. at G34-G43; Affidavits of Kenyon & Morrow (R.D. 77 Ex. 1-2, R. 544), App. B(1)-(2) to Brief; Answer ¶ B(16) (R. 546), J. A. D ¶ B(16).

[90] *E.g.*, T. DOBZHANSKY*, F. AYALA*, G. STEBBINS* & J. VALENTINE*, EVOLUTION 9 (1977); Mayr*, *Evolution*, SCIENTIFIC AM., Sept. 1978, at 47, 47, 51.

[91] *E.g.*, F. AYALA* & J. VALENTINE*, EVOLVING: THE THEORY AND PROCESSES OF ORGANIC EVOLUTION 1 (1979); W. STANSFIELD*, THE SCIENCE OF EVOLUTION 3 (1977).

[92] *E.g.*, Dobzhansky*, *Evolution*, 10 ENCYCLOPEDIA AMERICANA 734, 748 (1982).

[93] For a comprehensive discussion, see Mem. of Defendants at 393-488 (R.D.77, R.543), J.A. at G724-G901; Affidavits of Morrow*, Miethe & Most* (R.D.77 Ex. 2-4, R.544), App. B(2)-(4) to Brief; Answer ¶¶ B(13)-(14) (R.546), J. A. D ¶¶ B(13)-(14).

"harmonious" with various religions, and are parallel in every other aspect that might be alleged to be religious.[94] Each scientific explanation is *consistent with (although different from) various religions* that span the full theological spectrum:

Theological Category	*Creationist Religions*	*Evolutionist Religions*
(i) *Protestant:*	Conservative Evangelicalism & Fundamentalism; Church of Christ & Seventh-day Adventism.	Theological Liberalism & Neo-Orthodoxy;[95] Religious Humanism & Unitarianism.[96]
(ii) *Catholic:*	Much Orthodox Roman Catholicism; Eastern Orthodoxy.	Neo-Modernist Roman Catholicism.[97]
(iii) *Jewish:*	Orthodox Judaism.	Reform Judaism.[98]
(iv) *Non-Judeo-Christian:*	Islam (Muslims).	Buddhism & Hinduism;[99] Secular Humanism & other Humanist faiths etc.;[100] & Atheism.[101]

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[94] The panel opinion did not provide any documentation for its conclusory statement that "the theory of creation is a religious belief," or any analysis other than "that the theory of creation is a theory embraced by many religions," and "that evolution has historically been offensive to religious fundamentalists." 765 F.2d at 1256. These points are equally true of evolution, and do not render religious either scientific explanation.

[95] *E.g.*, K. CAUTHEN*, THE IMPACT OF AMERICAN RELIGIOUS LIBERALISM 7, 22 (1962) (importance of evolution to Theological Liberalism); Meland*, *Liberalism, Theological*, in 13 ENCYCLOPAEDIA BRITANNICA 1021, 1022 (W. Preece* ed. 1965) (same); J. MOORE*, THE POST-DARWINIAN CONTROVERSIES 304-05 (1979) (same historically).

[96] *E.g.*, *Humanist Manifesto I*, in HUMANIST MANIFESTOS I AND II (P. Kurtz* ed. 1973) (importance of evolution to Religious Humanism); Wilson*, *The Religious Element in Humanism Pervades Its Origin, Inspiration and Support*, 22 HUMANIST 173, 173 (1962) (same).

[97] *E.g.*, R. CROSS*, THE EMERGENCE OF LIBERAL CATHOLICISM IN AMERICA 149 (1958) (important role of evolution in Neo-Modernist Catholicism); P. TEILHARD DE CHARDIN*, CHRISTIANITY AND EVOLUTION 183-84 (R. Hague* trans. 1971) (same).

[98] *E.g.*, L. BARISH* & R. BARISH*, BASIC JEWISH BELIEFS 11 (1961) (important role of evolution in Reform Judaism); W. PLAUT*, THE TORAH: A MODERN COMMENTARY 6, 16 (1974) (same).

[99] K. Nakamura*, *Buddhist Philosophy*, in 3 ENCYCLOPAEDIA BRITANNICA: MACROPAEDIA 425, 425 (15th ed. 1975) (important role of evolution in Buddhism).

[100] *E.g.*, Kurtz*, *A Secular Humanist Declaration*, FREE INQUIRY, Winter 1980-81, at 3, 6 (important role of evolution in Secular Humanism); *Humanist Manifesto II*, in HUMANIST MANIFESTOS I AND II, *supra* note 96, at 13, 14 (same); Huxley*, *Evolutionary Humanism: Part I*, HUMANIST, Sept.-

The religions with which creation-science is consistent are not just Fundamentalist but many other Protestant, Catholic,[102] Jewish,[103] and non-Judeo-Christian faiths.[104] Such harmony between scientific explanation and religious belief does not violate the Establishment Clause: "the 'Establishment' Clause does not ban federal or state regulation whose reason or effect merely happens to coincide or harmonize with the tenets of some or all religions."[105]

Moreover, each scientific explanation is *antagonistic to some religious beliefs* in the view of some people.[106] To paraphrase the panel opinion, it is equally true that "[creation] has historically been offensive to religious [Liberals and others]," and that "evolution has historically been [embraced] by religious [Liberals and others]."[107]

c. *Evolution and Creation-Science Are Comparably Scientific.*[108] "[E]volution theory is in crisis," and is far from be-

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Oct. 1952, at 201, 208 (important role of evolution in Evolutionary Humanism "Religion"); note 106 *infra*.

[101] *E.g.*, Bozarth*, *The Meaning of Evolution*, Am. Atheist, Sept. 1978, at 19; Bock*, *Some Thoughts on Evolution*, Am. Atheist, Dec. 1981, at 4.

[102] *E.g.*, Pope Paul VI, *Original Sin and Modern Science*, in 11 The Pope Speaks (1966) (creationist rather than evolutionist belief of Orthodox Roman Catholicism); P. Fehlner, In the Beginning 30-32 (unpub. ms. 1983) (same).

[103] *E.g.*, Perlman, *Science vs. Evolution?*, in A Science and Torah Reader 28, 28 (Y. Komreich ed. 1970) (creationist belief of Orthodox Judaism); L. Spetner, Evolution: An Analysis from the Torah Premises 1 (in press 1986) (same).

[104] *E.g.*, Rahman*, *Islam*, in 9 Encyclopaedia Britannica: Macropaedia, *supra* note 99, at 911, 912 (creationist belief of Islam).

[105] McGowan v. Maryland, 366 U.S. 420, 442 (1961). *Accord*, Lynch v. Donnelly, 465 U.S. 668, 682 (1984); Harris v. McRae, 448 U.S. 297, 319 (1980).

[106] *E.g.*, Dencer, The Establishment Clause, Secondary Religious Effects, and Humanistic Education, 91 Yale L.J. 1196, 1214 n.90 (1982) ("The theory of evolution both indirectly inhibits some religions and indirectly advances others."); *supra* notes 95-101.

[107] *E.g.*, Is God a Creationist? The Religious Case Against Creation-Science (R. Frye* ed. 1983); *supra* notes 95-101.

[108] For a comprehensive discussion, see Mem. of Defendants at 93-191, 212-47, 269-88 (R.D. 77, R.543), J. A. at G169-G351, G388-G452, G491-G523; Affidavits of Kenyon, Morrow*, & Miethe (R.D. 77 Ex. 1-3, R.544), App. B(1)-(3) to Brief; Answer ¶ B(16) (R.546), J. A. D ¶ B(16).

ing compellingly established, as noncreationist scientists Saunders* and Ho* have observed.[109] The same conclusion has been reached by many other non-creationist scientists such as Grassé*[110] ("the most distinguished of French zoologists" [111]), Kerkut* (chief editor of a major biochemical journal),[112] Patterson* (senior paleontologist at the British Museum),[113] and Sermonti* (Director of Institute of Genetics at University of Palermo, and one of twelve speakers on evolution at the recent Pontifical Academy of Science at the Vatican),[114] and many others.[115] Biochemical evolution (of the first life)[116] and cosmic evolution (of the universe)[117] have problems equally as serious as has biological evolution.[118] The record cites several hundred similar concessions by noncreationist scientists, demonstrating that evolution is not compellingly substantiated or impervious to alternative scientific interpretations.

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[109] Ho* & Saunders*, *Preface* to Beyond Neo-Darwinism ix, ix (M. Ho* & P. Saunders* eds. 1984).

[110] P. Grassé*, Evolution of Living Organisms 202 (trans. 1977) ("the explanatory doctrines of biological evolution do not stand up to an objective, in-depth criticism").

[111] Dobzhansky*, Book Review, 29 Evolution 376, 376 (1975).

[112] G. Kerkut*, Implications of Evolution 150 (1961) (emphasis added) ("What conclusions, then, can one come to concerning the validity of the various implications of the theory of evolution? . . . [T]he *evidence is still lacking* for most of them.").

[113] Address by Dr. Colin Patterson*, Am. Museum of Natural Hist., tr. at 4 (Nov. 5, 1981) ("The second theme is that evolution not only conveys *no knowledge* but seems somehow to convey *antiknowledge* . . ..").

[114] G. Sermonti* & R. Fondi*, Dopo Darwin: Critica all' Evoluzionismo (1980). *Accord*, M. Vernet*, Revolution en Biologie (1969).

[115] *E.g.*, Olson*, *Morphology, Paleontology, and Evolution*, 1 Evolution after Darwin 523, 523 (S. Tax* ed. 1960) ("some among the biologists who feel that much of the [macroevolutionary] theory accepted by the majority today is actually false"); M. Denton*, Evolution: A Theory in Crisis 75, 77 (1985) ("Darwin's model of evolution is still very much a theory and still very much in doubt when it comes to macroevolutionary phenomena." It is "a highly speculative hypothesis entirely without direct factual support . . .."); Patterson*, *Cladistics and Classification*, 94 New Scientist 303, 306 (1982) ("Thus cladistics calls into question much of conventional evolutionary history."); Ball*, *On Groups, Existence and the Ordering of Nature*, 32 Systematic Zoology 446, 446 (1983) (Transformed cladists are "neutral or opposed to evolutionary theorizing of any kind in systematics," operating instead "in a non-evolutionary domain."); Lipson*, *A Physicist Looks at Evolution*, 31 Physics Bull. 138, 138 (1980) ("I have therefore tried to see whether biological discoveries over the last thirty years or so fit in with Darwin's theory. I do not think that they do. . . . To my mind, the theory does not stand up at all.").

[116] *E.g.*, Yockey*, *A Calculation of the Probability of Spontaneous Biogenesis by Information Theory*, 67 J. Theoretical Biology 377, 377

II. THE LOUISIANA BALANCED TREATMENT FOR CREATION-SCIENCE AND EVOLUTION-SCIENCE ACT IS CONSTITUTIONAL UNDER THE ESTABLISHMENT CLAUSE OF THE FIRST AMENDMENT, AND ADVANCES ACADEMIC FREEDOM UNDER THAT AMENDMENT, THUS REQUIRING REVERSAL, AS SEVEN JUDGES OF THE CLOSELY-SPLIT U.S. COURT OF APPEALS ARGUED FORCEFULLY IN DISSENT, FOR THE FOLLOWING REASONS.

A. Balanced Treatment for Creation-Science Is Constitutional under the Establishment Clause, in Light of the Decisions of This Court and Other Courts that Allow Public School Reference to a Creator or God (Which Creation-Science Does Not Necessitate) in Engel v. Vitale, Lynch v. Donnelly, Zorach v. Clausen, Etc., Whether under the Tripart Test or the Alternative Historical Test, as the Seven Dissenting Judges Implicitly Recognized.

(1977) ("belief in currently accepted scenarios of spontaneous biogenesis is *based on faith, contrary to conventional wisdom*").

[117] *E.g.*, F. Hoyle, The Intelligent Universe 186 (1983):

> [A] *sickly pall* now hangs over the *big bang theory*. As I have mentioned earlier, when a pattern of facts becomes set against a theory, experience shows that it rarely recovers. Jayant Narlikar, an Indian professor of cosmology, is a leading theoretical physicist who also shares this view.

[118] *See generally* Affidavits of Kenyon at 3-14 (R.D. 77 Ex. 1, R.544, App. B(1) to Brief), Morrow* at 2-3 (*id.* Ex. 2); Mem. of Defendants at 93-191, 212-47, 269-88 (R.D. 77, R.543), J. A. at G169-G351, G388-G452, G491-G523.

The seven-judge dissent, which closely split the Fifth Circuit, acknowledged that the Balanced Treatment Act, with its protection of academic freedom by teaching the "whole scientific truth," is constitutional:

> [T]hey did not seek to further their aim by requiring that religious doctrine be taught in public schools. Instead, they chose a more modest tactic—one that I am persuaded does *not infringe the Constitution.*[119]

The Establishment Clause allows public school reference to creation as a scientific explanation of empirical data, because it allows public school reference to a creator or God (*neither of which is required by or properly included in creation-science instruction*) in a non-worship context, under uniform precedent of this Court and lower courts.[120]

1. *Constitutionality of Reference to Creation under the Tripart Test*[121]

This Court upheld public school "references to the Deity or . . . Supreme Being, or . . . God" as being constitutional under the tripart test, including its legislative purpose prong, in the very *Engel v. Vitale*[122] decision that held mandatory prayer unconstitutional in public schools:

> There is of course nothing in the decision reached here that is inconsistent with the fact that *school children*

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[119] Aguillard v. Edwards, 778 F.2d at 226 (emphasis added).

[120] Even if, assuming arguendo, the concept of creation were found to be inherently religious through a reversal of Supreme Court precedent, its mention as part of instruction in scientific data would not violate the Establishment Clause. The Supreme Court similarly held in *Lynch* that inclusion of a nativity scene "in the context of the Christmas season" in a municipal Christmas display does not violate the Establishment Clause: "Focus exclusively on the religious component of any activity would inevitably lead to its invalidation under the Establishment Clause." 465 U.S. at 680. For another example, the Court in *Schempp* said that "study of the Bible or of religion, when presented objectively as part of a secular program of education," is consistent with the Establishment Clause, although the Bible is clearly religious when considered alone. School Dist. of Abington Township v. Schempp, 374 U.S. at 225. *See also* Witters v. Washington Dep't of Svcs. for the Blind, 474 U.S. ___, 88 L.Ed. 2d 846, 854 (1986).

[121] For the tripart test, see Committee for Pub. Educ. v. Regan, 444 U.S. 646, 653 (1980); Harris v. McRae, 448 U.S. 297, 319 (1980); Lemon v. Kurtzman, 403 U.S. 602, 612-13 (1971).

[122] 370 U.S. 421 (1962).

> and others are officially encouraged to express love for our country by reciting historical documents such as the Declaration of Independence which contain *references to the Deity* or by singing officially espoused anthems which include the composer's professions of faith in a *Supreme Being*, or with the fact that there are many manifestations in our public life of belief in *God*. Such patriotic or ceremonial occasions bear no true resemblance to the unquestioned religious exercise [mandatory classroom prayer] that the State of New York has sponsored in this instance.[123]

The Declaration of Independence, which this Court cited as appropriate for public school study, explicitly refers to a "Creator" and "God," as well as "creation," in several places.[124] The Constitution refers to "*our Lord*."[125] The national anthem, which this Court said may be constitutionally sung in the schools, says "[m]ay the heaven-rescued land praise the Power that hath made and preserved us a nation," and refers to "God".[126]

This Court[127] and other courts have similarly unanimously upheld the public school pledge to the flag,[128] with its reference to "one nation under God,"[129] and with its purpose to affirm the dependence of "our Government upon the moral directions of the Creator."[130] Lower courts have sustained singing the national anthem in public schools. [131] This Court has repeatedly stated that America's "institutions presuppose a Supreme Being," referring with approval to a number of widespread practices including some in public schools. [132] The Fifth and Ninth Circuits have upheld the national motto, "In God We Trust."[133] Conformity to the tripart test is further discussed in Section II(B) *infra*.

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[123] *Id.* at 435 n.21 (emphasis added). *Accord,* Lynch v. Donnelly, 465 U.S. at 676 *passim*; *see* Zorach v. Clauson, 343 U.S. 306, 312-13 (1952).

[124] *Declaration of Independence* ¶¶ 1, 2, 32, 1 Stat. 1 (1789).

[125] *Infra* note 139.

[126] *See* 36 U.S.C. § 170.

[127] *E.g.*, Lynch v. Donnelly, 465 U.S. at 676; Engel v. Vitale, 370 U.S. at 435 n.21.

[128] *E.g.*, Aronow v. United States, 432 F.2d 242, 243 (9th Cir. 1970); Smith v. Denny, 280 F. Supp. 651, 654 (E.D. Cal. 1968), *appeal dismissed*, 417 F.2d 614 (9th Cir. 1969); Opinion of the Justices, 108 N.H. 97, 101, 228 A.2d 161, 164 (1967); Lewis v. Allen, 5 Misc. 2d 68, 159 N.Y.S.2d 807 (1957), *aff'd*, 11 App. Div. 2d 447, 207 N.Y.S.2d 862 (1960), *aff'd*, 14 N.Y.2d 867, 200 N.E.2d 767, 252 N.Y.S.2d 80, *cert. denied*, 379 U.S. 923 (1964); Lanner v. Wimmer, 662 F.2d 1349 (10th Cir. 1981); Bogen v. Doty, 456 F. Supp. 983, 985 (D. Minn. 1978), *aff'd*, 598 F.2d 1110 (8th Cir. 1979); Reed v. Van Hoven, 237 F. Supp. 48, 56 (W.D. Mich. 1965).

[129] 36 U.S.C. § 172.

2. *Constitutionality of Reference to Creation under the Alternative Historical Test*

a. Alternate Tests. The alternative historical test conclusively shows the constitutionality under the Establishment Clause of public school reference to the scientific concept of creation, just as the tripart test does. This Court has explicitly recognized alternative approaches to the Establishment Clause besides the tripart test, and has repeatedly said that the tripart test is not an exclusive approach to the Establishment Clause.[134] The alternative test that the Court has specifically employed in *Marsh v. Chambers*[135] is a historical test that generally upholds governmental actions that were accepted as constitutional at the time the First Amendment was adopted.[136] As stated in *Marsh*,

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[130] H.R. REP. No. 1693, 83d Cong., 2d Sess. 2, *reprinted in* [1954] U.S. CODE CONG. & AD. NEWS 2339, 2340.

[131] *E.g.*, Sheldon v. Fannin, 221 F. Supp. 766, 774 (D. Ariz. 1963); Opinion of the Justices, 108 N.H. at 102, 228 A.2d at 164; Reed v. Van Hoven, 237 F. Supp. at 56.

[132] *E.g.*, Lynch v. Donnelly, 465 U.S. at 675-76; Walz v. Tax Comm'n, 397 U.S. 664, 672 (1970); Zorach v. Clauson, 343 U.S. at 313; Holy Trinity Church v. United States, 143 U.S. 457, 470 (1892).

[133] O'Hair v. Blumenthal, 588 F.2d 1144 (5th Cir. 1979), *cert. denied*, 442 U.S. 930 (1979) (*aff'g* 462 F. Supp. 19, 19-20 (W.D. Tex. 1978)). *Accord*, *e.g.*, Lynch v. Donnelly, 465 U.S. at 676; Aronow v. United States, 432 F.2d at 243.

[134] *E.g.*, Lynch v. Donnelly, 465 U.S. at 679; Marsh v. Chambers, 463 U.S. 783 (1983); Mueller v. Allen, 463 U.S. 388, 394 (1983); Larson v. Valente, 456 U.S. 288 (1982); Jones v. Wolf, 443 U.S. 595 (1979); Tilton v. Richardson, 403 U.S. 672, 677-78 (1971); *see* Committee for Pub. Educ. v. Nyquist, 413 U.S. 756, 773 (1973).

[135] 463 U.S. 783 (1983).

> historical evidence sheds light not only on what the draftsmen intended the Establishment Clause to mean, but also how they thought that Clause applied to the practice authorized by the First Congress—their actions reveal their intent. An Act
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> > "passed by the first Congress assembled under the Constitution, many of whose members had taken part in framing that instrument, . . . is contemporaneous and weighty evidence of its true meaning."[137]

b. Historical Evidence. The historical evidence of constitutionality is overwhelming.[138] The Constitution itself closes with "*in the year of our Lord,*"[139] and was written in the historical context of the Declaration of Independence. The Declaration refers to "creation" as well as to a "Creator,"[139.1] and was written by the same Jefferson who coined the "wall of separation" phrase long afterwards in 1802. The First Congress in 1789, which approved the Establishment Clause, codified the Declaration as its first statute.[140] That First Congress also passed a resolution asking the president "to set aside a Thanksgiving Day to acknowledge 'the many signal favors of Almighty God,' "[141] and did so on the very day that "final agreement was reached on the language of the Bill of Rights," as this Court stressed in *Marsh v. Chambers.*[142] The First Congress also authorized chaplains and prayers to God three days earlier:[143] "Clearly the men who wrote the First Amendment Clauses did not view paid legislative chaplains and opening prayers as a violation of that Amendment . . . ."[144] Earlier during the First Congress, on April 30, 1789, President Washington gave his first inaugural address to Congress, and referred to the "Author" of the world as well as to the "Almighty Being."[145]

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[136] *E.g. id.* at 786-91. *Accord,* Lynch v. Donnelly, 465 U.S. at 674-75, 678; *see also* Walz v. Tax Comm'n, 397 U.S. 664, 671 (1970) (historical basis for tax exemptions); McGowan v. Maryland, 366 U.S. 420, 431-41 (1961) (historical basis for Sunday closing laws).

[137] 463 U.S. at 790, *quoting* Wisconsin v. Pelican Ins. Co., 127 U.S. 265, 297 (1888). *Accord,* Lynch v. Donnelly, 465 U.S. at 674.

[138] *E.g.,* C. ANTIEAU, A. DOWNEY & E. ROBERTS, FREEDOM FROM FEDERAL ESTABLISHMENT 111-203 (1964); R. CORD, SEPARATION OF CHURCH AND STATE: HISTORICAL FACT AND CURRENT FICTION 2-83 (1982); M. MALBIN, RELIGION AND POLITICS: THE INTENTIONS OF THE AUTHORS OF THE FIRST AMENDMENT 1-18 (1978); J. MCCLELLAN, JOSEPH STORY AND THE AMERICAN CONSTITUTION 118-59 (1971); 2 J. STORY, COMMENTARIES ON THE CONSTITUTION §§ 1870-1879 (1833); Kurland, *The Irrelevance of the Constitution,* 24 VILL. L. REV. 3, 5-9 (1978).

[139] U.S. CONST. (after art. VII and before signatures).

[139.1] *Supra* note 124. The Virginia Act for Establishing Religious Freedom similarly refers to "Almighty God" and "created." 12 Hening's Laws of Va. 84, 84 (1786).

[140] 1 Stat. 1 (1789).

An early Congress established public schools in the District of Columbia in 1804, and those schools did teach about a "Creator" as well as referring to "God,"with Jefferson's support as the first president of the District of Columbia school board.[146] Jefferson's own curricular plan for the University of Virginia, while omitting theology instruction, included "a professor of ethics who was to treat 'the proof of the being of a God, the Creator' . . . ."[147] This "Supreme Court, for more than a century and a half, showed no reticence in invoking the

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[141] 1 ANNALS OF CONG. 914 (1789).

[142] 463 U.S. at 788 & n.9. President Washington indeed issued a Thanksgiving Proclamation eight days later, which referred in part to the "author" of the world as well as to "God." 1 A COMPILATION OF THE MESSAGES AND PAPERS OF THE PRESIDENTS (J. Richardson ed. 1901). Madison similarly issued four prayer proclamations. *Id.* at 513, 532-33, 558.

[143] 1 ANNALS OF CONG. 2180 (1789), 1 Stat. 71. *See also* Marsh v. Chambers, 463 U.S. at 787-88. Madison voted for the chaplaincy appropriation, and was on the committee designing the chaplaincy. *Id.* at 788 n.8.

[144] 463 U.S. at 788.

[145] A COMPILATION OF THE MESSAGES AND PAPERS OF THE PRESIDENTS, *supra* note 82, at 51, 52. "God is mentioned or referred to in all inaugural addresses but Washington's second, which is a very brief . . . acknowledgment." R. BELLAH, BEYOND BELIEF 187 (1970). That includes Jefferson's and Madison's inaugural addresses.

[146] Wilson, *Eighty Years of the Public Schools of Washington,* in 1 RECS. OF COLUM. HIST. SOC. 119, 122-23, 127 (1897); *see* Comment, *Jefferson and the Church-State Wall,* 1978 B.Y.U.L. REV. 645.

[147] C. ANTIEAU, A. DOWNEY & E. ROBERTS, *supra* note 138, at 200.

Deity in its own decisions."[148] Extensive further evidence could be cited.

B. Balanced Treatment for Creation-Science Is Constitutional under the Establishment Clause, under the Tripart Test, Because the Legislative Purpose and Primary Effect Prongs Are Met by the Expressly Stated, Heavily Documented, and Precedentially Supported Purpose and Effect of Advancing "Academic Freedom" To Hear Additional Scientific Evidence on the Subject of Origins, in the Words of the Statute, as Constantly Reaffirmed in the Official Legislative Transcripts, and as Acknowledged by the Seven Dissenting Judges on the Closely-Split U.S. Court of Appeals; and Because No Entanglement Reasonably Can Be Expected with Religious Institutions.

The forceful dissent of seven Fifth Circuit judges explicitly found that the Balanced Treatment Act "does not infringe the Constitution" [149] through a nonsecular legislative purpose or otherwise:

> Such authorities [*Stone v. Graham, Wallace v. Jaffree, Lemon v. Kurtzman, Karen B. v. Treen*] treat of statutes having a direct and clear religious connection, either by way of granting public assistance to religious schools or by requiring religious activities in public ones. The statute which concerns us today is quite different: it has no direct religious reference whatever and *merely requires that the whole scientific truth be taught* on the subject if any is.
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> . . . .
>
> I should have thought that *requiring the truth to be taught* on any subject displayed its own secular warrant.[150]

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[148] Pfeffer, *The Deity in American Constitutional History*, 23 J. CHURCH & STATE 215, 238 (1981); *id.* at 219-28 (citing decisions).

[149] Aguillard v. Edwards, 778 F.2d at 226.

[150] *Id.* at 227, 228 (emphasis added).

> . . ..
>
> By *requiring that the whole truth be taught*, Louisiana aligned itself with Darrow; striking down that requirement, the panel holding aligns us with Bryan.[151]

Professor Thomas Emerson of Yale Law School similarly stressed that the First Amendment "obligation of the government must be to present a fairly balanced exposition of various relevant theories and points of view."[152]

1. Secular Legislative Purpose of Protecting Academic Freedom

The Balanced Treatment Act in fact had the secular purpose of "protecting academic freedom" of students by offering additional "scientific evidence," in the words of the statute, and by "requiring the truth to be taught," in the words of seven appellate judges. Professor Laurence Tribe of Harvard Law School proposes the basic principle, implicitly followed by the dissenters, that "anything '*arguably non-religious*' should not be considered religious in applying the establishment clause."[153] As defined above, creation-science is clearly non-religious, and the official legislative record bears that out.

a. Exclusive or Predominant Purpose Requirement. This Court recently stated that the legislative purpose requirement is violated "*only*" when the governmental activity was "*motivated wholly by religious considerations*" (citing *Epperson v. Arkansas* for the point):

> The Court has invalidated legislation or governmental action on the ground that a secular purpose was lacking, but *only* when it has concluded there was no question that the statute or activity was motivated *wholly* by religious considerations. See, *e.g.*, *Stone v. Graham*, *supra*,

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[151] *Id.* at 226 (emphasis added).

[152] Emerson & Haber, *The* Scopes *Case in Modern Dress*, 27 U. CHI. L. REV. 522, 527 (1960) (not specifically discussing creation-science, and warning that government must not proscribe academically recognized theories or "exclusively" impose other theories). *Accord*, Note [Bird], *Freedom of Religion and Science Instruction in Public Schools*, 87 YALE L.J. 515 (1978).

[153] L. TRIBE, AMERICAN CONSTITUTIONAL LAW § 14-6, at 828 (1978) (not discussing creation-science; emphasis in original).

> at 41; *Epperson v. Arkansas*, 393 U.S. 97, 107-109 (1968); *Abington School District v. Schempp, supra*, at 223-224; *Engel v. Vitale*, 370 U.S. 421, 424-425 (1962). Even where the benefits to religion were substantial, as in *Everson, supra; Board of Education v. Allen*, 392 U.S. 236 (1968), *Walz, supra*, and *Tilton, supra*, we saw a secular purpose and no conflict with the Establishment Clause.[154]

Wallace v. Jaffree[155] reiterated that the purpose requirement is violated only if a law "is *entirely* motivated by a purpose to advance religion," and is *not* violated if "motivated *in part* by a religious purpose." [156] This Court also has stressed a "reluctance to attribute unconstitutional motives to the states, particularly when *a plausible secular purpose*" appears on "the face of the statute."[157]

While the seven-judge dissent correctly looked for and found "a credible secular purpose,"[158] the panel decision erroneously assumed that the secular legislative purpose requirement (which was the court's basis for decision) requires a " 'pre-eminent ' " secular purpose.[159]

b. Deference to the Stated Purpose and Legislative History. This Court has stressed that a law's stated purpose should not lightly be disregarded.[160] The official legislative record also should not be disregarded,[161] and particularly a complete record such as Louisiana's 300 pages. [162] The views of "adherents of particular faiths and individual churches" on such "public issues" are not generally relevant to the legislature's purpose, as this Court has held. [163]

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[154] Lynch v. Donnelly, 465 U.S. at 680 (emphasis added). *Accord, e.g.*, Harris v. McRae, 448 U.S. 297, 319 (1980); McGinnis v. Royster, 410 U.S. 263, 276 (1973)(under equal protection clause); *see* McGowan v. Maryland, 366 U.S. 420, 444-49 (1961)(upholding Sunday closing laws despite partly religious purpose for enactment); Karen B. v. Treen, 653 F.2d 897, 900 (5th Cir. 1981), *aff'd mem.*, 455 U.S. 913 (1982) ("a secular legislative purpose"); Florey v. Sioux Falls Sch. Dist. 49-5, 619 F.2d 1311, 1314-15 (8th Cir.), *cert. denied*, 449 U.S. 987 (1980).

[155] 472 U.S. ___, 105 S.Ct. 2479 (1985).

[156] *Id.* at 2490. *Accord, id.* at 2491, 2492.

[157] *E.g.*, Mueller v. Allen, 463 U.S. at 394-95 (1983).

[158] Aguillard v. Edwards, 778 F.2d at 227.

[159] Aguillard v. Edwards, 765 F.2d at 1256. *Accord, id.* at 1257.

[160] *E.g.*, Witters v. Washington Dep't of Svcs. for the Blind, 474 U.S. ___, 88 L.Ed.2d at 853 ("the secular purpose articulated by the legislature"); Committee for Pub. Educ. v. Regan, 444 U.S. at 654 ("here, as in *Wolman*, there is clearly a secular purpose behind the legislative enactment: '[quoting the stated purpose]' "); Board of Educ. v. Allen, 392 U.S. at 243 ("express purpose"); McGowan v. Maryland, 366 U.S. 420, 445 (1961)

The seven dissenters correctly criticized the panel's approach [164] that brushed away the stated purpose and official legislative record:

> [T]he *panel draws upon its visceral knowledge* regarding what must have motivated the legislators. It sifts their hearts and minds, *divines their motive* for requiring that truth be taught, and strikes down the law that requires it. This approach effectually *makes a farce of the judicial exercise of discerning legislative intent.* . . . To disregard so completely the existing manifestations of intent and impose instead one's personal, subjective ideas as to what *must* have been the true senti-

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(same); Brest, *Palmer v. Thompson: An Approach to the Problem of Unconstitutional Legislative Motive*, 1971 Sup. Ct. Rev. 95, 130 (should not invalidate law for illicit purpose unless "clear and convincing evidence"); *see generally* Seldman, *The Establishment Clause and Religious Influence on Legislation*, 75 Nw.U.L. Rev. 944 (1980).

[161] *E.g.*, Wallace v. Jaffree, 472 U.S. ___, 105 S.Ct. 2479, 2491 (1985) ("The unrebutted evidence of legislative intent contained in the legislative record"); Committee for Pub. Educ. v. Regan, 444 U.S. at 654.

[162] J.A. Ex. E-A(7) through -A(14). This involves full hearings (*id.* Ex. E-A(8), -A(9) & -A(11)), as well as many readings (*id.* Ex. E-A(14)) and drafts (*id.* Ex. E-A(7), -A(10), -A(12) & -A(13)).

[163] Walz v. Tax Comm'n, 397 U.S. 664, 760 (1970) ("Adherents of particular faiths and individual churches frequently take strong positions on public issues including, as this case reveals in the several briefs amici, vigorous advocacy of legal or constitutional positions. Of course, churches as much as secular bodies and private citizens have that right. No perfect or absolute separation is really possible; the very existence of the Religion Clauses is an involvement of sorts—one that seeks to mark boundaries to avoid excessive entanglement."). *Accord, Choper, The Religion Clauses of the First Amendment*, 41 U. Pitt. L. Rev. 673, 683-84 (1980) ("Surely, legislation is not invalid simply because a religious organization supported or opposed it."); Seldman, *supra* note 160, at 948-49.

For the most impartial history of the creation-evolution controversy, see generally E. Larson, Trial and Error: The American Legal Controversy over Creation and Evolution ([Oxford Univ. Press] 1985).

[164] Aguillard v. Edwards, 765 F.2d at 1256.

ment of the Louisiana legislature ignores this constitutional restraint on judicial power.[165]

c. Louisiana Purpose of Advancing Academic Freedom. The legislative purpose for the Balanced Treatment Act was the constitutional purpose of advancing students' academic freedom by providing additional scientific information, as the Act, its legislative history, and its predictable effect indicate. The plausibility of that secular purpose, and the implausibility of a religious purpose, is indicated by the overwhelming Louisiana legislative support (79% and 68%) [166] and overwhelming national public support (86%) for public school teaching of creation-science.[167] This secular purpose was recognized by the seven-judge dissent, as quoted on page 2 *supra*.[168]

The official *legislative history*,[169] corroborating the Act's stated purpose "to protect academic freedom,"[170] is replete with evidence of this purpose of protecting students' *academic freedom* to hear additional scientific information. Academic freedom was stressed by Senator Keith (a sponsor)[171] and nearly every witness speaking for the Act (including three scientists) at every single legislative hearing.[172] For example, Dr. Edward Boudreaux, a chemistry professor at the University of New Orleans, stated that

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[165] Aguillard v. Edwards, 778 F.2d at 227 (emphasis added).

[166] The vote was comparably overwhelming among Protestants and Catholics. *See* J.A. Ex. E-A(14), at 2689, 2934.

[167] *E.g.*, NBC News & Associated Press, November National Poll at 15 (Nov. 24, 1981) (86% support for teaching creation in public schools) (scientific national survey); Stacey & Shupe, *Religious Values and Religiosity in the Textbook Adoption Controversy in Texas 1981*, 25 REV. OF RELIGIOUS RESEARCH 321, 326 (1984) (similar majorities of Protestants & Catholics). A 67% majority of school board members also supports creation-science instruction. *Survey*, AM. SCHOOL BD. J., Mar. 1980, at 52.

[168] Aguillard v. Edwards, 778 F.2d at 228.

[169] *Supra* note 162. The 1980 hearings and bill do not reflect what the legislature intended to *adopt* in the 1981 Act, but instead what it intended to *reject*, as discussed at p. 41 *infra*.

[170] La. Rev. Stat. § 17:286.2.

[171] *E.g.*, S. Comm. on Educ., J. A. Ex. E-A(8), at 2, 3, 8 (May 21, 1981); S. Comm. on Educ., *id.* Ex. E-A(9), at 15, 16 (May 28, 1981); H. Comm. on Educ., *id.* Ex. E-A(11) at 58, 52, 8, 10, 11, 12 (June 25, 1981); *see* Jt. Subcomm. on Elem. & Sec. Educ., *id.* Ex. E-A (6), at 30, 32, 28, 31 (Dec. 16, 1980); Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. A-E(4), at 2, 3, 5 (Nov. 25, 1980). Quotations herein from the legislative transcripts have been correctly punctuated and spelled.

> In fact, what the bill is actually supporting in my opinion is *academic freedom*: freedom to teach science *objectively* in the way that it should be taught and *not biasedly*.[173]

Sen. Keith similarly stated his purpose as being to advance academic freedom by ending "censorship" of scientific data:

> Gentlemen, I submit to you today that scientific creationism is a bona fide *science*. I have enumerated six or seven of the tenets of this bona fide science, and yet today it is being *censored* from our classrooms. And I'm saying that if we're going to teach evolution, this group of some of the finest scientists in America said that the classical Darwinism (which most students learn when they are in high school), that the fossils point overwhelmingly away from this. If we are going to continue to teach that, then we need to balance it with *scientific data* that points to creationism.[174]

At the final hearing, Sen. Keith repeated that purpose of protecting the academic freedom of students.[175]

Denials of any desire to bring the Bible into public schools also were reiterated at every hearing.[176] The *scientific and*

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172. *E.g.*, H. Comm. on Educ., *id.* Ex. E-A(11), at 10-11, 12 (June 25, 1981); *see* S. Comm. on Educ., *id.* Ex. E-A(2), at 9, 10, 11, 11-12, 12 (June 19, 1980); Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 14, 17, 24, 25, 33, 34, 35 (Nov. 25, 1980).

173. *E.g.*, S. Comm. on Educ., *id.* Ex. E-A(9), at 16 (May 28, 1981) (emphasis added). *Accord*, H. Comm. on Educ., *id.* Ex. E-A(11), at 2 (June 25, 1981); *see* Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 14 (Nov. 25, 1980).

174. S. Comm. on Educ., *id.* Ex. E-A(9), at 15 (May 28, 1981) (emphasis added). *Accord*, *e.g.*, *id.* at 16.

175. *E.g.*, H. Comm. on Educ., *id.* Ex. E-A(11), at 58, 52 (June 25, 1981). *Accord*, *e.g.*, *id.* at 8, 10, 11, 12.

Although Sen. Keith stated on a single occasion that his "preference would be that neither be taught," the context as well as his general viewpoint was strong support for requiring that both creation-science and evolution be taught if either is taught.

176. *E.g.*, S. Comm. on Educ., *id.* Ex. E-A(9), at 13, 15, 16, 22, 3 (May 28, 1981); H. Comm. on Educ., *id.* Ex. E-A(11), at 2-4, 6, 8, 9, 11-12, 58 (June 25,

non-religious nature of creation-science was stressed by nearly every witness,[177] and the incorrect definitions of creation-science appearing in an Arkansas law were rejected by the Louisiana legislature with the unanimous support of Sen. Keith and other legislators and the witnesses.[178] For example, Sen. Keith, at the very first hearing on the bill, explicitly stated that the bill provided for teaching "scientific data" rather than religion, and that he "would be opposed to" teaching *Genesis*:

> Is there a body of *scientific evidence* that is being *censored* from our classrooms? . . . I've been accused of wanting to teach the first chapter of Genesis in our science classrooms in our public schools. *Not only would I be opposed to that* (I have never advocated that), but scientists all across the country are telling me "yes, *there is a wealth of scientific data*, pure scientific data, that points to creationism"; and *that's why I introduced this bill.*[179]

At the very next legislative hearing, Keith stressed that the issue was a scientific issue, outlined several examples of scientific evidence constituting creation-science, and concluded that creation-science is scientific data that is being "censored":

> *I think it is a scientific issue*, and I believe it does great *wrong to try to make this a religious issue*. . . . Gentle-

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1981); Jt. Comm. on Elem., Sec. & Vo-Tech Educ., *id.* Ex. E-A(4), at 2, 3-4, 12, 13, 18, 19, 24, 33, 35 (Nov. 25, 1980); Jt. Subcomm. on Elem. & Sec. Educ., *id.* Ex. E-A(6), at 30, 31, 32 (Dec. 16, 1980); S. Comm. on Educ., *id.* Ex. E-A(8), at 6 (May 21, 1981); *see* S. Comm. on Educ., *id.* Ex. E-A(2), at 7, 8, 11, 12-13 (June 19, 1980).

[177] *E.g.*, S. Comm. on Educ., *id.* Ex. E-A(9), at 16, 22 (May 28, 1981); S. Comm. on Educ., *id.* Ex. E-A(8), at 2, 3 (May 21, 1981); H. Comm. on Educ., *id.* Ex. E-A(11), at 2, 4, 9, 10, 11, 12, 58 (June 25, 1981); *see* Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 2, 3-4, 11, 12, 13, 14, 18, 19, 24, 18-29, 33, 35 (Nov. 25, 1980); Jt. Subcomm. on Elem. & Sec. Educ., *id.* Ex. E-A(6), at 28, 30, 32 (Dec. 16, 1980); S. Comm. on Educ., *id.* Ex. E-A(2), at 4, 7, 8, 9, 11 (June 19, 1980).

[178] S. Comm. on Educ., *id.* Ex. E-A(9), at 18-19 (May 28, 1981).

[179] *E.g.*, S. Comm. on Educ., *id.* Ex. E-A(8), at 2 (May 21, 1981) (emphasis added). *Accord, id.* at 3, 8; S. Comm. on Educ., *id.* Ex. E-A(9), at 14-15.

> men, I submit to you today that *scientific creationism is a bona fide science. . . .* If we are going to continue to teach [Darwinism], then we need to balance it with the *scientific data* that points to creationism.[180]

At the final hearing, Keith again stated that creation-science is as scientific as evolution:

> [T]here has been a lot of misrepresentation about what scientific creationism really is . . .. [T]here are a growing number of people in this nation who have learned that *scientific creationism is just as good science, if not better science, than evolution science. . ..* Therefore, what we will attempt to establish today is that there is a body of *scientific evidence*, a body of *scientific data*, called scientific creationism. . .. So, I think that, from a broad spectrum of people, apart from those scientists who are here at this table this morning, we are going to try to show today that there is a *body of evidence known as creation-science* that is totally apart from the teaching of the Genesis account of creation.[181]

The *expert witnesses* for Act 685 also unanimously stressed that creation-science is scientific instruction:[182]

> There is a fair body of knowledge that can be taught in creation [science]. It has to do with [data] from *astronomy* where you can show that the universe was created. It has to do from studies of the *fossil record* which, of course, shows sudden transitions rather than the continual transitions required.[183]

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[180] S. Comm. on Educ., *id.* Ex. E-A(9), at 13, 15 (May 28, 1981) (emphasis added). *Accord, e.g., id.* at 22.

[181] H. Comm. on Educ., *id.* Ex. E-A(11), at 2-4 (June 25, 1981) (emphasis added). *Accord, e.g., id.* at 58.

[182] *E.g.*, S. Comm. on Educ. *id.* Ex. E-A(8), at 6 (May 21, 1981); *id.* Ex. E-A(9), at 16 (May 28, 1981); H. Comm. on Educ., *id.* Ex. E-A(11) at 6, 9, 11-12 (June 25, 1981).

[183] H. Comm. on Educ., *id.* Ex. E-A(11), at 9 (June 25, 1981) (emphasis added) (Dr. Charles Harlow of LSU).

Sen. Keith similarly summarized the "scientific data that points to creation" of which creation-science consists,[184] and reiterated the point at the other legislative hearings.[185]

The major amendment that *deleted as incorrect illustrations of creation-science*, from the rough draft of the bill,[186] was unanimously adopted by the Senate Committee on Education within a week of the first legislative hearing.[187] The full support of Sen. Keith, as well as the full consent of the three creationist expert witnesses present, was given to that amendment.[188] The legislative reason for the deletion was that "[m]aybe there are some things in here that *ought not have been included*" as illustrations of creation-science[189] (Those incorrect illustrations included creation "from nothing" or "ex nihilo," creation of "kinds," a "worldwide flood," a "relatively recent inception," etc.) Thus, the bill as amended provided only for teaching science. Moreover, as the appellees concede, those incorrect illustrations of creation-science were not drafted by Sen. Keith or other Louisiana legislators, but were in the original draft he received of a possible statute, and thus were not within his individual purpose. The legislature's *immediate and unanimous rejection* of those incorrect illustrations, *without any subsequent effort to restore them*, shows its corporate legislative purpose to define creation-science only as including science.

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[184] S. Comm. on Educ., *id.* Ex. E-A(9), at 22 (May 28, 1981). Sen. Keith listed examples of that scientific data as follows:

> 160 of the world's top paleontologists, anatomists, evolutionists, and developmental biologists . . . overwhelmingly said: "Evidence from fossils now points overwhelmingly away from the classical Darwinian theory which most Americans learned in high school." . . . Now I want you to listen to *what creation-science is*. First of all, creation scientists believe the *second law of thermodynamics* points to creation. . . . Another point of creation scientists is *biogenesis*. . . . Biogenesis effectively kills the concept of evolution. . . . Dr. Boudreaux gave you a very, very detailed presentation last week of the *mathematical impossibility* for evolution. . . . This is creation-science. There are two others. In the area of the *fossil record*, . . . creation scientists tell us that the *fossil record points to creation and not to evolution*. . . . I submit to you today that scientific creationism is a bona fide *science*. I have enumerated six or seven of the tenets of this bona fide science, and yet today it's being censored from our classrooms . . ..

Id. at 14-15.

[185] *E.g.*, *id.* Ex. E-A(8), at 2, 3 (May 21, 1981); H. Comm. on Educ., Ex. E-A(11), at 2, 4, 58 (June 25, 1981).

[186] Those incorrect illustrations were the basis for most of the district court opinion in *McLean v. Arkansas Board of Education*, which is discussed at p. 45 *infra*.

[187] S. Comm. on Educ., J.A. Ex. E-A(9), at 18-19 (May 28, 1981).

[188] *Id.*

[189] *Id.*

The panel decision ignored this ponderous official legislative record and instead "drew upon its visceral knowledge."[190]

d. Marginal Relevance of the Rejected 1980 Bill. Comparison of the 1981 Act with a *rejected 1980 bill* shows that the legislative purpose was to further students' academic freedom and to provide for totally scientific instruction. That 1980 bill reflects what the legislature *rejected, not* what it intended to *adopt*, in the 1981 Balanced Treatment Act. The reason is that the 1980 bill not only was *not* enacted but was *not* even voted out of committee, and in fact was *abandoned* by Sen. Keith himself and by the other sponsors. Definitions in the 1980 bill were unanimously and immediately dropped from the 1981 bill.

Nevertheless, the legislative hearings on the 1980 bill reflect a consistent *legislative purpose* of *advancing the academic freedom* of students. Sen. Keith stated this explicitly:

> *My intent* is to see to it that our textbooks are *not censored*. Right now, those facts that point toward creationism are being *censored*. In Clarence Darrow's closing arguments in the *Scopes* trial, he said it is absolutely "bigotry to teach only one concept."
>
> . . . .
>
> I believe that the question is one of *academic freedom*. Even some of you refer to the question of academic freedom. I believe that academic freedom is: Will the student be given the *choice*—or will he only receive one

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[190] Aguillard v. Edwards, 778 F.2d at 227 (dissenting opinion).

> model of indoctrination on origins? That is *censorship* when he is not given both views.[191]

He made the same point at other committee hearings.[192] The expert witnesses testifying in favor of balanced treatment at the 1980 hearings also stressed academic freedom as the reason for their support.[193]

Those hearings, to the extent they are relevant at all, also reflect a consistent emphasis that *creation-science is scientific*. Sen. Keith affirmed at every hearing that the 1980 bill's[194] definition of creation-science consists of scientific data.[195] The supportive expert witnesses[196] also stressed that creation-science is scientific.[197]

The *reasonably expected effect* of the Balanced Treatment Act, in providing more scientific information and ending exclusive instruction in just one scientific viewpoint, also corroborates the stated legislative purpose of advancing academic freedom to receive information. This is evident in the remark by Clarence Darrow, of *Scopes* trial fame, that it is "bigotry for public schools to teach only one theory of origins."[198] Similarly, John Scopes[199] and Charles Darwin[200] themselves acknowledged the secular purpose for presenting both explanations of origins.

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[191] Jt. Subcomm. on Elem. & Sec. Educ., J A. Ex. E-A(6), at 30, 32 (Dec. 16, 1980) (emphasis added). *Accord, id.* at 28, 31.

[192] *E.g.*, Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 2, 3, 5 (Nov. 25, 1980).

[193] *E.g.*, S. Comm. on Educ., *id.* Ex. E-A(2), at 9, 10, 11, 11-12, 12 (June 19, 1980); Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 14, 17, 24, 25, 33, 34, 35 (Nov. 25, 1980).

[194] He also affirmed that it did not involve religious concepts. *E.g.*, Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 2, 3-4 (Nov. 25, 1980); Jt. Subcomm. on Elem. & Sec. Educ., *id.* Ex. E-A(6), at 30, 31, 32 (Dec. 16, 1980).

[195] *E.g.*, Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 2, 3-4 (Nov. 25, 1980); *id.* Ex. E-A(6), at 28, 30, 32 (Dec. 16, 1980).

[196] They also stressed that creation-science is non-religious. *E.g.*, S. Comm. on Educ., *id.* Ex. E-A(2), at 7, 8, 11 (June 19, 1980); Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* E-A(4), at 11, 12, 13, 14, 18, 19, 24, 28-29, 33, 35 (Nov. 25, 1980).

[197] *E.g.*, S. Comm. on Educ., *id.* Ex. E-A(2), at 4, 7, 8, 9, 11 (June 19, 1980); Jt. Comm. on Elem., Sec. & Vo-Tech. Educ., *id.* Ex. E-A(4), at 11, 12, 13, 14, 18, 19, 24, 28-29, 33, 35 (Nov. 25, 1980).

[198] R. O'Bannon, *Creation, Evolution and Public Education* 5, Dayton Symposium on Tennessee's Evolution Laws (May 18, 1974).

e. Irrelevance of Individual Legislators' Views. The purpose, motive, or assessment of one or more individual legislators is not controlling or even indicative of the legislative purpose, which is the purpose of the entire legislature. This Court has recently stated that

> ordinarily even the contemporaneous remarks of a *single legislator who sponsors* a bill are *not controlling* in analyzing legislative history.[201]

Many other Supreme Court decisions support this point.[202] Similarly, the views of "adherents of particular faiths and individual churches" on such "public issues" are not relevant to the legislature's purpose.[203]

f. Analogous Supreme Court Decisions. This legislative purpose for balanced treatment of creation-science and

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[199] P. DAVIS & E. SOLOMON*, THE WORLD OF BIOLOGY 414 (1974) (quoting Scopes):

> Education, you known, means broadening, advancing, and if you limit a teacher to *only one side* of anything the whole country will eventually have only one thought, be one individual. I believe in *teaching every aspect of every problem or theory.*

[200] C. DARWIN*, THE ORIGIN OF SPECIES 2 (1859, repr. 1964):

> For I am well aware that scarcely a single point is discussed in this volume on which *facts* cannot be adduced, often apparently leading to conclusions directly opposite to those at which I have arrived. A fair result can be obtained only by fully stating and *balancing the facts and arguments on both sides of each question* . . ..

[201] *E.g.*, CPSC v. G.T.E. Sylvania, 447 U.S. 102, 118 (1980) (emphasis added). *Accord, e.g.*, Karen B. v. Treen, 653 F.2d 897, 901 (5th Cir. 1981), *aff'd mem.*, 455 U.S. 913 (1982) ("In fact, the personal testimony of individual proponents, given in court after enactment of the statute, . . . reflects on the partial perspectives of those legislators and not the collective intention of the entire legislative body."); Marchese v. United States, 126 F.2d 671 (5th Cir. 1942) ("Its meaning ought justly to be gathered from its words as promulgated to the public rather than from the expressions of legislators or even of their committees pending its passage.").

[202] *E.g.*, Chrysler Corp. v. Brown, 441 U.S. 281 (1979); United States v. Emmons, 410 U.S. 396 (1973); Palmer v. Thompson, 403 U.S. 217, 224 (1971); United States v. O'Brien, 391 U.S. 367, 383-84 (1968); McCaughan v. Hershey Chocolate Co., 283 U.S. 488, 493 (1931); United States v. Trans-Mo. Freight Ass'n, 166 U.S. 290, 318 (1897).

[203] *Supra* note 163.

evolution is manifestly constitutional in comparison with other governmental activities for which this Court has found sufficient secular purposes. This Court has upheld much financial aid to religious schools or their students or parents,[206] a governmental Christmas display with a nativity créche,[207] public school references to a creator or God,[208] legislative chaplaincies and prayers, equal access by religious organizations to public university facilities, judicial resolution of church property disputes by neutral principles, tax exemptions to religious organizations, and certain released time from public schools for religious instruction.[209] The reason is that those decisions involved aid to or involvement with religious organizations or precepts, whereas balanced treatment involves scientific data divorced from religion.[210]

g. Epperson and McLean. Epperson v. Arkansas,[211] on which the panel and district court heavily relied, is not controlling and in fact opposes rather than supports summary judgment. First, *Epperson* involved a "sole reason" (legislative purpose) of excluding evolution and teaching the "Genesis account" of creation, rather than offering more scientific information.[212] Second, it involved the "Book of Genesis" and "biblical account of creation," rather than creation-science.[213] Third, the *Epperson* law forbade instruction in evolution rather than giving it balanced treatment or "excis[ing] . . . all discussion of the origin of man."[214] Fourth, the decision stressed the Establishment Clause requirement of "neutrality between religion and religion, and between religion and nonreligion,"[215] which is precisely what balanced treatment produces and precisely what exclusive instruction in evolution thwarts. Finally, *Epperson* did *not* involve summary judgment, but instead a trial, and did not in any way imply that summary judgment was proper on issues of the religious nature of a matter or the legislative purpose.

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[206] *E.g.*, Mueller v. Allen, 463 U.S. 388 (1983); Committee for Pub. Educ. v. Regan, 444 U.S. 646 (1980); Wolman v. Walter, 433 U.S. 229 (1977); Roemer v. Board of Pub. Works, 426 U.S. 736 (1976) (plurality op.); Meek v. Pittenger, 421 U.S. 349 (1975); Tilton v. Richardson, 403 U.S. 672 (1971); Board of Educ. v. Allen, 392 U.S. 236 (1968); Everson v. Board of Educ., 330 U.S. 1 (1947).

[207] Lynch v. Donnelly, 465 U.S. at 661-85.

[208] *Supra* Section II(A).

[209] *E.g.*, Marsh v. Chambers, 463 U.S. 783 (1983); Widmar v. Vincent, 454 U.S. 263, 271-72 (1981); Jones v. Wolf, 443 U.S. 595 (1979); Walz v. Tax Comm'n, 397 U.S. 664 (1970); Zorach v. Clauson, 343 U.S. 306 (1952).

[210] Decisions not involving aid to or involvement with religion, but mere consistency of secular purposes with religious concerns, upheld the legislative purposes for denial of governmental funding of abortions and for retention of Sunday closing laws. *E.g.*, Harris v. McRae, 448 U.S. at 319-20; McGowan v. Maryland, 366 U.S. at 442.

[211] 393 U.S. 97 (1968).

[212] *Id.* at 103, 107. *Accord*, Lynch v. Donnelly, 465 U.S. at 680.

The district court decision in *McLean v. Arkansas Board of Education*[216] is incorrect in our opinion,[217] but implicitly acknowledges that the issues herein are factual issues that require a trial.[218]

2. *Secular Primary Effect of Providing More Scientific Information*

a. Advancing Academic Freedom. The primary effect of the Balanced Treatment Act is to advance students' academic freedom to receive scientific information. This can be seen in the support given to balanced treatment by a number of evolutionists,[219] as well as by Scopes and Darrow as men-

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213. 393 U.S. at 103, 107-09.

214. *Id.* at 109.

215. *Id.* at 104.

216. 529 F. Supp. 1255 (E.D. Ark. 1982) (not appealed). *See generally* Caudill, *supra* note 6, at 14-19, 35-36, 42-44.

217. There are critical differences between the Arkansas case and the instant case: (i) wording of the statutes, (ii) definition of creation-science, (iii) legislative purpose, (iv) science, theology, and philosophy evidence and arguments, (v) expert witnesses and their planned testimony, and (vi) Establishment Clause and academic freedom arguments.

218. Besides holding a trial in the case, the court devoted at least 17 pages of its 19-page opinion to factual discussion.

219. *E.g.*, Affidavits of Morrow* & Most* (R.D. 77 Ex. 2 & 4, R.544), App. B(2)&(4) to Brief; A. Thompson*, Biology, Zoology, and Genetics: Evolution Model vs. Creation Model 2 (1983) ("Students should be exposed to both sides of the coin regarding biological change—the doctrine of creation and that of evolution"); *Scientists Abandon Evolution*, Contrast, Mar.-Apr. 1982, at 1, 3 (Dr. William Provine* [a self-described Atheist]: "[C]reationism is a viable, understandable and plausible theory for the cre-

tioned *supra*. The primary effect prong is not violated by such public school curricula that merely "coincide or harmonize with the tenets of some or all religions,"[220] or by mere "incidental benefits to religion."[221] Nor is it violated by the Act's provisions prohibiting discrimination against creationist teachers,[222] because only they had been shown to be threatened with discrimination,[223] and providing for an advisory group of creationist scientists,[224] because only their viewpoint had been shown to be excluded from textbooks and classrooms.[225]

b. Analogous Supreme Court Decisions. Many decisions of this Court involving analogous governmental activities lend support to the constitutionality of balanced treatment. They were summarized in *Lynch v. Donnelly*, as follows:

> "But to conclude that the *primary effect* of including the creche is to advance religion in violation of the Establishment Clause would require that we view it as more beneficial to and more an endorsement of religion, for example, than expenditure of large sums of public money for textbooks supplied throughout the country to students attending church-sponsored schools, *Board of Education v. Allen, supra*, expenditure of public funds

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ation point. It is my opinion that it is a wrong theory . . . I would like it discussed, particularly in the science classroom . . . .").

[220] *E.g.*, Harris v. McRae, 448 U.S. at 319-20; McGowan v. Maryland, 366 U.S. at 442.

[221] *E.g.*, Lynch v. Donnelly, 465 U.S. at 683; Committee for Pub. Educ. v. Nyquist, 413 U.S. 756, 771 (1973).

[222] La. Rev. Stat. § 17:286.4(C).

[223] That was reflected in some depositions incorporated into this action, R.527, and was the subject of an offer of proof in the State's factual assertions. Mem. of Defendants at 510-15 (R.D.77, R.543), J.A. at G § A(4)[c].

Moreover, federal law already protects evolutionists against discrimination, Epperson v. Arkansas, 393 U.S. 97 (1968); and the Balanced Treatment Act does not restrict parallel protection of evolutionist teachers.

[224] La. Rev. Stat. § 17:286.7(B).

[225] Mem. of Defendants at 505-10 (R.D.77, R.543), J.A. at G § A(4)[c].

Furthermore, the creationist scientists were only to provide advice without compensation, and evolutionist scientists also could be appointed without violating the statute. If unconstitutional, these provisions can be severed under Section 2 of the Balanced Treatment Act.

> for transportation of students to church-sponsored schools, *Everson v. Board of Education, supra*, federal grants for college buildings of church-sponsored institutions of higher education combining secular and religious education, *Tilton, supra*, noncategorical grants to church-sponsored colleges and universities, *Roemer v. Board of Public Works*, 426 U.S. 736 (1976), and the tax exemptions for church properties sanctioned in *Walz, supra*. It would also require that we view it as more of an endorsement of religion than the Sunday Closing Laws upheld in *McGowan v. Maryland*, 366 U.S. 420 (1961); the released time program for religious training in *Zorach, supra*; and the legislative prayers upheld in *Marsh, supra*.
>
> We are unable to discern a greater aid to religion deriving from inclusion of the creche than from these benefits and endorsements previously held not violative of the Establishment Clause.[226]

Balanced treatment offers even less of a secondary effect of benefiting religion than those activities described in *Lynch*, or than the other activities whose primary effects (and legislative purposes) this Court has upheld: equal use of veterans' benefits for religious higher education, equal access to public university facilities for religious groups, and judicial resolution of church property disputes through neutral principles.[227] Balanced treatment instead offers at most the sort of secondary effect of "coinciding or harmonizing with the tenets of [creationist and evolutionist] religions" that was sustained in connection with funding denial for abortions and with Sunday closing laws.[228]

3. *No Excessive Entanglement from Added Scientific Information*

No excessive entanglement would arise from balanced treatment for several reasons.

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[226] 465 U.S. at 681-82.

[227] *E.g.*, Witters v. Washington Dep't of Svcs. for the Blind, 474 U.S. ___, 88 L.Ed.2d 846 (1986); Widmar v. Vincent, 454 U.S. 263 (1981); Jones v. Wolf, 443 U.S. 595 (1979).

[228] *E.g.*, Harris v. McRae, 448 U.S. at 319-20; McGowan v. Maryland, 366 U.S. at 442.

a. Nonentanglement from Same Activities. First, the same level of screening texts and classrooms has *already been upheld* by this Court, in *Board of Education v. Allen,*[229] *Mueller v. Allen,*[230] and other decisions.[231] In fact, greater screening is permissible when "the Bible [religious material] may constitutionally be used [in public schools] in an appropriate study of [non-religious subjects such as] history, civilization, ethics, comparative religion, or the like," without excessive entanglement.[232] A fortiori, the lesser screening necessary for the use of non-religious material (such as the scientific evidence of creation-science) for teaching non-religious subjects (such as biology and physics) does not produce impermissible entanglement. Moreover, a "real threat" of excessive entanglement must exist, rather than merely an imagined possibility.[233]

Second, the same sort of screening *already occurs* in *Louisiana public schools* to avoid impermissible religious content, and can apply to balanced treatment as to other curricula. This Court has said it is "not prepared to read into the plan as an inevitability the bad faith upon which any future excessive entanglement would be predicated."[234] *Teachers* should be presumed to teach curricular material in good faith without introducing religious doctrine.[235] The response by some Louisiana school superintendents (not teachers) to a questionnaire tells nothing about possible entanglement, because 74% had "no knowledge" or "limited knowledge" of creation-science, according to the preceding question in that survey.[236] *Curricular materials* will become available when the Act is enforced. One or more national secular textbook companies can be expected to publish balanced treatment texts or supplements, because one already has with limited treatment.[237] The scientific content of which those texts can consist is exemplified by the 300 science pages of the State's brief in the district court.[238]

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[229] 392 U.S. 236, 244-45 (1968). This decision upheld state textbook loans to religious school students, despite the necessary screening of textbooks.

[230] 463 U.S. 388, 403 (1983). *Mueller* sustained state tax deductions and audits for religious school textbooks if secular texts and if not "instructional books and material used in the teaching of religious tenets." 463 U.S. at 390 n.1.

[231] *E.g.*, Committee for Pub. Educ. & Religious Liberty v. Regan, 444 U.S. 646 (1980). *Regan* upheld state reimbursement of parochial teacher time in grading secular tests and keeping secular records. *Id.* at 657-59.

[232] *E.g.*, Lynch v. Donnelly, 465 U.S. at 679, *quoting* Stone v. Graham, 449 U.S. 39, 42 (1981). *Accord*, School Dist. of Abington Township v. Schempp, 374 U.S. 203, 225 (1963).

[233] *E.g.*, Marsh v. Chambers, 463 U.S. at 795.

[234] *E.g.*, Committee for Pub. Educ. v. Regan, 444 U.S. 646, 660-61 (1980). *See also* Marsh v. Chambers, 463 U.S. at 795.

[235] *E.g.*, Board of Educ. v. Allen, 392 U.S. at 243.

Third, the very same screening is *already necessary* for instruction in *evolution*, to ensure that theistic evolution is not taught[239] and that impermissible religious discussion does not occur.[240] Evolution has the same types and degrees of implications for religion and world views as does creation-science, because each is consistent with various religions and world views.[241]

b. Nonentanglement by Definition. Moreover, this screening by definition *cannot constitute any entanglement* with churches or other religious institutions; at most it involves interrelations between public education officials and public schools.[242] As this Court said in an entanglement case,

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[236] Office of Research & Dev.*, La. Dep't of Educ., Status Assessment: Act 685—Balanced Treatment for Creation-Science and Evolution-Science 6 (Nov. 1981), J.A. E-L at 6. Another 4.7% did not respond. *Id.*

[237] V. WEBSTER* ET AL., LIFE SCIENCE ([Prentice-Hall, Inc.] 1980).

[238] Mem. of Defendants at 18-289 (R.D. 77, R.543), J.A. at G34-G523.

[239] *See supra* pp. 23-24 & nn. 95-101 (theistic evolutionist religions).

[240] The same classroom questions or statements that theoretically could be asked or made about creation-science could equally well be asked of evolution, such as "who caused" creation or evolution. That mere possibility does not produce excessive entanglement from either creation-science or evolution; teachers in either case are presumed to act in good faith and to decline to allow impermissible religious discussion. *See* Committee for Pub. Educ. v. Regan, 444 U.S. at 660-61; Board of Educ. v. Allen, 392 U.S. at 245.

[241] *See supra* pp. 23-24 & nn. 95-101 (citing sources).

[242] *E.g.*, Lynch v. Donnelly, 465 U.S. at 683-85 (no entanglement from crèche in city Christmas display because no city contact with church authorities over its design or content); Roemer v. Board of Pub. Works, 426

> Neither will there be any excessive entanglement arising from supervision of public employees to insure that they maintain a neutral stance. It can hardly be said that the supervision of public employees performing public functions on public property creates an excessive entanglement between church and state.[243]

A philosophy professor, who also holds a law degree and who opposes balanced treatment, reached this same conclusion of no excessive entanglement:

> Although each book loaned [in *Allen*] had to be approved by public school authorities and only secular books could be approved, the Court did not think this continual monitoring of textbooks would involve excessive entanglement. . . . *Certainly, no more would be required of school boards in the monitoring of textbooks under* [balanced treatment]. The monitoring of *classroom discussion* would be troublesome as a practical administrative matter. It would, however, not involve entanglement *with religion,* as would the state's monitoring of classroom discussion in a parochial school. The state might become excessively entangled with the administration of its own public schools. *This, however, is not an entanglement with religion.* Furthermore, it is *doubtful that much monitoring of classroom discussion would have to be done* in any case. Public school teachers have no constitutional right to disregard the planned curriculum.[244]

The tripart test, as well as the alternative historical test, is met by balanced treatment of creation-science and evolution. Academic freedom is furthered by providing students with more scientific information.

U.S. at 766 ("entanglement of church and state"); Meek v. Pittenger, 421 U.S. at 370 (same).

[243] Wolman v. Walter, 433 U.S. 229, 248 (1977) (majority opinion in that Part VI of opinion).

[244] Scheid*, *Evolution and Creation in the Public Schools*, 9 J.PUB.L. 81, 99 (1983) (although Prof. Scheid sees effect and purpose problems). *Accord*, Lines*, *Scientific Creationism in the Classroom*, 28 LOYOLA L. REV. 35, 50-51 (1982).

CONCLUSION

For these reasons, the Court should summarily reverse the summary judgment below on procedural grounds, or reverse it on the constitutional merits, to allow a trial.

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APPENDIX A. OPINIONS OF U.S. COURT OF APPEALS EN BANC

UNITED STATES COURT OF APPEALS FOR THE FIFTH CIRCUIT

Don Aguillard, et al.,) No. 85-3030
Plaintiffs-Appellees,) OPINION
v.) ON SUGGESTION FOR
Edwin W. Edwards, et al.,) REHEARING EN BANC ...
Defendants-Appellants.)

Filed December 12, 1985
[778 F.2d 225]

Treating the suggestion for rehearing en banc as a petition for panel rehearing, the petition for panel rehearing is DENIED. The judges in regular active service of this Court having been polled at the request of one of said judges and a majority of said judges not having voted in favor of it (Federal Rules of Appellate Procedure and Local Rule 35), the suggestion for Rehearing En Banc is DENIED.

Before: Charles Clark, Chief Judge, Thomas Gibbs Gee, Alvin B. Rubin, Thomas M. Reavley, Henry A. Politz, Carolyn Dineen Randall, Albert Tate, Sam D. Johnson, Jerre S. Williams, Will Garwood, E. Grady Jolly, Patrick E. Higginbotham, W. Eugene Davis, Robert M. Hill, and Edith H. Jones, Circuit Judges.

THOMAS GIBBS GEE, Circuit Judge, with whom Charles Clark, Chief Judge, Thomas M. Reavley, Will Garwood, Patrick E. Higginbotham, Robert M. Hill and Edith H. Jones, Circuit Judges, join dissenting:

Today our full court approves, by declining review en banc, a panel opinion striking down a Louisiana statute as one "respecting an establishment of religion." The panel reasons that by requiring public school teachers to present a balanced view of the current evidence regarding the origins of life and matter (if any view is taught) rather than that favoring one view only and by forbidding them to misrepresent as established fact views on the subject which today remain theories only, the statute promotes religious belief and violates the academic freedom of instructors to teach whatever they like.

The *Scopes* court upheld William Jennings Bryan's view that states could constitutionally forbid teaching the scientific evidence for the theory of evolution, rejecting that of Clarence Darrow that truth was truth and could always be taught—whether it favored religion or not. By requiring that the whole truth be taught, Louisiana aligned itself with Darrow; striking down the requirement, the panel holding aligns us with Bryan.

I disagree with this holding; and because we endorse it today, I respectfully dissent.

BACKGROUND

In 1981 the Louisiana legislature passed the legislation which is the subject of today's controversy. Sections 17:286.1 through 286.7, Louisiana Revised Statutes. Its full text appears as an appendix to the panel opinion, at 765 F.2d 1251, 1258. The general purport of this law is to provide three things.

1. That the "subject of origins" of the universe, of life, and of species need not be taught at all in the public schools of Louisiana; but,
2. That if *either* "creation-science" (defined as "the scientific evidences for creation and inferences from" them) *or* "evolution-science" (parallel definition) be taught, balanced treatment be given the other; and,
3. That, if taught, each be taught as a theory, "rather than as proven scientific fact."

I am as capable as the panel of making an extra-record guess that much, if not most, of the steam which drove this enactment was generated by religious people who were hostile to having the theory of evolution misrepresented to school children as established scientific fact and who wished the door left open to acceptance by these children of the Judeo-Christian religious doctrine of Divine Creation. If so, however, they did not seek to further their aim by requiring that religious doctrine be taught in public school. Instead, they chose a more modest tactic—one that I am persuaded does not infringe the Constitution.

That was to provide, as my summary of the statute indicates, that neither evolution nor creation be presented as finally established scientific fact and that, when evolution is taught as a theory, the scientific evidence for such competing theories as a "big bang" production of the universe or for the sudden appearance of highly developed forms of life be given equal time (and vice versa). As I noted at the outset, the record contains affidavits—some of them by highly-qualified scientists who there proclaim themselves agnostics and believers in evolution as a theory—which affirm that the above propositions are correct: that evolution is not established fact and that there is strong evidence that life and the universe came about in a different manner, one perhaps less inconsistent with religious doctrine. At the least, these affidavits make a fact issue that those propositions are true. For purposes of reviewing the summary judgment which our panel's opinion affirms, then, the propositions stated must be taken as established: there *are* two bona fide views.

It follows that the Louisiana statute requires no more than that neither theory about the origins of life and matter be misrepresented as fact, and that if scientific evidence supporting either view of how these things came about be presented in public schools, that supporting the other must be—so that within the reasonable limits of the curriculum, the subject of origins will be discussed in a balanced manner if it is discussed at all. I see nothing illiberal about such a requirement, nor can I imagine that Galileo or Einstein would have found fault with it. Indeed, so far as I am aware even Ms. O'Hair has never asked for more than equal time.

Let it be conceded, for purposes of argument, that many of those who worked to get this legislation passed did so with a religious motive. It well may be that many who advocated Louisiana's Sunday closing Law, recently upheld by us, did so from such a motive. There being evident a credible secular purpose for that law, however, we upheld it. *Home Depot, Inc. v. Guste*, No. 84-3532, slip op. at 167 (Oct. 10, 1985). There can be no doubt that the Louisiana Legislature was empowered under the state constitution to enact the law in question, one mandating a particular course of public school instruction; the Louisiana Supreme Court has squarely so held, on certification from us earlier in the course of this appeal. *Aguillard v. Treen*, 440 So.2d 704 (La. 1983).

Despite this, our panel struck the statute down.

THE PANEL OPINION

The panel's reasoning is simple. *Lemon v. Kurtzman*, 403 U.S. 602 (1972), sets three hurdles before any statute attacked as establishing religion. The panel holds that the Louisiana statute trips over the first, which requires that "the statute must have a secular legislative purpose; . . . ." *Lemon, supra*, at 612. I cannot agree.

The panel opinion chiefly rests upon such Supreme Court authorities as *Lemon* (state aid to church schools), *Stone v. Graham*, 449 U.S. 39 (1980) (posting Ten Commandments in every classroom), and *Wallace v. Jaffree*, __U.S.__, 86 L.Ed.2d 29 (1985) (moment of silence for "meditation or voluntary prayer"), as well as on such holdings from our own court as *Lubbock Civil Liberties Union v. Lubbock I.S.D.*, 669 F.2d 1038 (5th Cir. 1982) (religious meetings on school property) and *Karen B. v. Treen*, 653 F.2d 897 (5th Cir. 1981) (classroom prayer). Such authorities treat of statutes having a direct and clear religious connection, either by way of granting public assistance to religious schools or by requiring or permitting religious activities in public ones. The statute which concerns us today is quite different: it has no direct religious reference whatever and merely requires that the whole scientific truth be taught on the subject if any is.

In order to invalidate it as "establishing religion," it was therefore necessary for the panel to look beyond the statute's words and beyond legislative statements of secular purpose. To strike the statute down, the panel drew upon its visceral knowledge regarding what must have motivated the legislators. It sifts their hearts and minds, divines their motive for requiring that truth be taught, and strikes down the law that requires it. This approach effectually makes a farce of the judicial exercise of discerning legislative intent. The task is admittedly a most difficult and often impossible one, since legislatures are not known for providing clear guidance to those interpreting their works; but it is a task constitutionally required. To disregard so completely the existing manifestations of intent and impose instead one's personal, subjective ideas as to what *must* have been the true sentiment of the Louisiana legislature ignores this constitutional restraint on judicial power.

Moreover, even assuming the panel's guess about legislative sentiment is right, the infirmity of its reasoning becomes immediately evident when it is extended from prescribing what is to be taught to the teaching itself. If it is unconstitutional to *require* secular matter to be taught from a motive to advance religion it must necessarily also be unconstitutional to *teach* it from such a motive. If so, a public school teacher so indiscreet as to admit to teaching the evidence for creation science from a motive to advance religion is subject to being silenced, while one teaching exactly the same matter without such a motive cannot be interfered with. Like a clock that strikes 13, a rule that produces such a result as this cannot be sound.

I await with interest the application of this new mode of constitutional analysis to other statutes. The bigamy laws, for example, carry tell-tale indicia of having been passed with a motive to favor the Judeo-Christian religious preference for monogamy, singling it out for adoption over the equally workable Moslem view. Perhaps our court, consulting its intuitive knowledge about what motivates legislators, will presently determine that there can be no secular purpose in such a preferment of one model of the marital relationship over another, especially when the effect of doing so is to espouse the religious doctrine of the two larger religious sects in our country over that of the minority of Moslems. But such intriguing possibilities must await another day, and I return to the case in hand.

I should have thought that requiring the truth to be taught on any subject displayed its own secular warrant, one at the heart of the scientific method itself. Put another way, I am surprised to learn that a state cannot forbid the teaching of half-truths in its public schools, whatever its motive in doing so. Today we strike down a statute balanced and fair on its face because of our perception of the reason why it got the votes to pass: one to prevent the closing of children's minds to religious doctrine by misrepresenting it as in conflict with established scientific laws. After today, it does not suffice to teach the truth; one must also teach it with the approved motive. It may be that the Constitution forbids a state to require the teaching of lies in the classrooms of its public schools; perhaps among its emanations or penumbras there can be found means to invalidate such a law, say, as one mandating that students be taught that the earth is flat or that chattel slavery never existed in this country. It comes as news to me, however, that the Constitution forbids a state to require the teaching of truth—any truth, for any purpose, and whatever the effect of teaching it may be. Because this is the holding that we endorse today, I decline to join in that endorsement and respectfully dissent.

E. GRADY JOLLY, Circuit Judge, Responding to Dissent:

First, as writer of the panel opinion, I offer my apologies to the majority of this court for aligning it with the forces of darkness and anti-truth. Second, I do not personally align myself with the dissenters in their commitment to the eternal search for truth through state edicts. Third, I commend to the dissenters a serious rereading of the majority opinion that they may recognize the hyperbole of the opinion in which they join. And, finally, I respectfully submit, the panel opinion speaks for itself, modestly and moderately, if one will allow its words to be carefully heard.

APPENDIX B. AFFIDAVITS (UNCONTROVERTED) FROM RECORD

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF LOUISIANA

DON AGUILLARD, ET AL.,	)	
Plaintiffs,	)	CIVIL ACTION
v.	)	No. 81-4787
EDWIN W. EDWARDS, ET AL.,	)	SECTION H
Defendants.	)	

1. AFFIDAVIT OF DR. DEAN H. KENYON IN BIOLOGY AND BIO-CHEMISTRY

STATE OF CALIFORNIA)
COUNTY OF SAN MATEO) [R.D. 77 Ex. 1]

I, DEAN H. KENYON, make the following free and voluntary statement, after being duly sworn, and state on oath as follows:

A. *Personal*

1. *Name.* My name is DEAN H. KENYON, and I reside in San Mateo County, California. I am a biologist.

2. *General.* I make this Affidavit with the understanding that it is to be used in the above-styled case. All statements herein are within my personal knowledge (including the types of knowledge on which experts in my field typically rely in forming expert opinions on the subject). I am competent to testify to the facts recited in this Affidavit.

B. *Academic Credentials*

3. *Academic Background.* My Ph.D. degree was earned in biophysics from Stanford University in 1965, and my Bachelor of Science degree from the University of Chicago in physics in 1961. In 1965 and 1966 I did postdoctoral study as a National Science Foundation postdoctoral fellow at the University of California at Berkeley in the chemical origins of life, performing original experimentation on the origin of life. I served as a Visiting Scholar at Trinity College of Oxford Uni-

versity in 1974, on the subject of the reception of Darwinism in England. [2]

4. *Professional Positions.* I am a full Professor of Biology at San Francisco State University, and have been such since 1974. I was an Assistant Professor from 1966 to 1969, and an Associate Professor from 1969 through 1974. I have taught undergraduate courses on the origin of life, evolution, the Darwinian revolution, introductory biophysics, cell biology, human biology, history of biology, and bioethics; and graduate school courses or seminars in biogenesis, cellular biophysics, photobiology, comparative biochemistry, carcinogenesis, biomagnetism, and biological effects of gravity.

5. *Publications.* I published a book entitled *Biochemical Predestination* in 1969, along with G. Steinman, which argued in favor of biochemical evolution. The Preface to the Russian edition was written by A. I. Oparin, an international expert in the field. Based on my original research on biochemical evolution, I have published numerous articles on or related to the subject in such publications as Photochemistry and Photobiology, Biochimica et Biophysica Acta, Laboratory of Chemical Biodynamics Quarterly, Enzymologia, Perspectives in Biology and Medicine, Science (Book Review), Origins of Life, Journal of Molecular Evolution, and a chapter in *The Origin of Life and Evolutionary Biochemistry.*

C. *Summary*

6. *Scientific Nature of Creation-Science and Evolution.* It is my professional opinion, based on my original research, study, and teaching, that creation-science is as scientific as evolution, although it currently does not have the benefit of the volume of research that has been carried out under evolutionist presuppositions. It is my conviction that if any professional biologist will take adequate time to examine carefully the assumptions upon which the macroevolutionary doctrine rests, and the observational and laboratory evidence that bears on the problem of origins, he/she will conclude that there are substantial *reasons for doubting* the truth of this doctrine. Moreover, I believe that a scientifically sound crea-

tionist view of origins is not only possible, but is to be *preferred* over the evolutionary view.

7. *Nonreligious Nature of Creation-Science and Evolution.* It is my opinion, although not in the area of my expertise, that creation-science is as nonreligious as evolution.

8. *Educational Value of Creation-Science and Evolution.* It is also my conclusion that balanced presentation of creation-science and evolution is educationally valuable, and in fact is more educationally valuable than indoctrination in just the viewpoint of evolution. Presentation of alternate scientific explanations has educational benefit, and balanced presentation of creation-science and evolution does exactly that. Creation-science can indeed be taught in the classroom in a strictly scientific sense, and a text[*3*]book can present creation-science in a strictly scientific sense, either as a supplement or as part of a balanced presentation text.

D. *Definitions of Creation-Science and Evolution*

9. *Definitions of Creation-Science and Evolution.* Creation-science means origin through abrupt appearance in complex form, and includes biological creation, biochemical creation (or chemical creation), and cosmic creation. Evolution-science is equivalent to evolution. Evolution is generally understood by scientists (although some would disagree) to include biological evolution (or organic evolution) from simple life to all plants and animals, biochemical evolution (or chemical evolution or prebiotic evolution of the first life), and cosmic evolution (including stellar evolution) (of the universe). Creation-science does not include as essential parts the concepts of catastrophism, a world-wide flood, a recent inception of the earth or life, from nothingness (ex nihilo), the concept of kinds, or any concepts from Genesis or other religious texts. The subject of origins is a part of evolution, and the origin of the first life and the origin of the universe are generally regarded by the scientific community as part of evolution.

10. *Sole Alternative to Scientific Explanations.* It is not only my professional opinion but that of many leading evolutionist scientists, at present and in the past, that creation-

science and evolution are the sole scientific alternative explanations, although each includes a variety of approaches. Either plants and animals evolved from one or more initial living forms (biological evolution), or they were created (biological creation). Either the first life evolved from nonliving molecules (biochemical evolution), or it was created (biochemical creation). Either the universe evolved from the big bang or other initial state (cosmic evolution), or it was created (cosmic creation). Although some individuals hold to "theistic evolution" and other viewpoints, either these viewpoints are approaches under evolution or creation-science or they combine elements of evolution with elements of creation-science.

E. *Comparable Scientific Nature of The Concepts of Biological Creation and Biological Evolution*

11. *Introduction.* We tend too easily to forget that creationist views of origins predominated in scientific circles before the publication of Darwin's *On the Origin of Species* in 1859 (Gillespie 1979). The *leading scientists* of Europe and the United States were creationist scientists, and they defended their views with scientific evidence and argument. Examples include Sir Richard Owen, Baron Georges Cuvier and Louis Agassiz, who each made outstanding contributions to his field (Eiseley 1958). After 1859 many scientists came to accept Darwin's naturalistic view of origins, although Owen, Agassiz and others resisted the new doctrine (Cuvier died in 1832). Gradually, creationist scientific interpretations of nature all but disappeared from university science courses.[*4*]

12. *Creationist Scientists and Scientific Data.* Although students generally hear only one side on the origins question, increasing numbers of scientists are now abandoning evolution for a new scientific version of creationism. Creationist scientists now number in the hundreds, possibly in the thousands, in the States and in other countries. This extraordinary development, I believe, has resulted largely from analysis of new scientific data not available to Darwin (or to his followers until relatively recently), especially chemical in-

formation bearing on the origin of first life and paleontological and other information bearing on biological origins. In sum, biological creation is scientific, and in fact is scientifically stronger than biological evolution.

1. *Biological Evolution*

13. *Macroevolution and Microevolution.* Macroevolution is evolutionary change above the species level, including the alleged transformation from unicellular organisms to invertebrates, to vertebrate fish, to amphibians, to reptiles, to birds and mammals, to primates, to humans (biological macroevolution). Microevolution is change within local populations at or below the species level. Creationist scientists do not dispute, but accept, microevolution. In fact creationist scientists regard much of what Darwin wrote to be basically correct. Moreover, they acknowledge the validity of most of the research described in the journals of evolutionary biology. Outside the subject of evolution, there is substantial agreement between the two sides on at least 90% of the subject matter of the biological sciences. So there is the basis for a mature and productive discussion of the origins question, outside as well as inside the classroom.

14. *Paleontological Considerations.* Fossils are the only direct evidence we have that bears on the question of whether macroevolution actually happened. Charles Darwin and T. H. Huxley were well aware of the *absence of transition forms* in the fossil record known in their day. In *On the Origin of Species* Darwin wrote:

> Why then is not every geological formation and every stratum full of such intermediate links? Geology assuredly does not reveal any such finely graduated organic chain, and this is perhaps the most obvious and gravest objection which can be urged against my theory. The explanation lies, as I believe, in the extreme imperfection of the geologic record (1859:280).

Darwin went to great lengths to explain why he thought the fossil record was highly fragmentary and incomplete. But the early Darwinians expected many of the gaps to be filled in the future paleontological work.[*5*]

15. *Adequacy of the Fossil Record.* Over 120 years of paleontological research have not provided any significant number of "missing links," and there are reasons for doubting the transition status of those few that have been found. We now have about 250,000 fossil species (Raup 1979) which may represent at least 1% of all the species that ever lived. Since some paleontologists now consider the fossil record to be reasonably complete (Stanley 1979:1), evolutionists are faced with a disturbing dilemma. Either macroevolution did not occur, or it occurred in such a way that it left no direct evidence of having occurred.

16. *Archaeopteryx as Best Link.* In response to the above line of reasoning evolutionists state that *Archaeopteryx* clearly demonstrates the macroevolutionary transition from reptiles to birds. In fact, they say, *Archaeopteryx* is the best example of a transition form in the vertebrate fossil record. It had teeth and a bony tail, both "reptilian characters," as well as true feathers, a feature restricted to birds. But *Archaeopteryx* was very likely capable of powered flight, judging from its relatively massive furcula and the asymmetric rachis of its primary flight feathers (Feduccia and Tordoff 1979; Olson and Feduccia 1979). Other fossil birds had teeth, although they are present in no modern form. Moreover, some reptiles do not have teeth. There is really no compelling reason for not considering *Archaeopteryx* an extinct true bird. Thus the gap between reptiles and birds will remain unbridged until such time as a fossil reptile with the *beginnings* of feathers may be found. The other macroevolutionary gaps in the vertebrate fossil record, including those in the so-called "horse series," are all as large or larger than the gap between reptiles and birds.

17. *Punctuated Equilibrium.* Given the choice presented by the fossil data, increasing numbers of evolutionists are adopting a new version of evolutionary theory (Gould 1977, 1980; Gould and Eldredge 1977). This new view is in sharp contrast to Darwin's belief that virtually all natural populations were slowly evolving continuously. Suddenly, for un-

known reasons, small peripherally isolated populations of a given species rapidly evolved into new species, only a few of which survive, perhaps only one. The successful new species expand their numbers and remain in stasis for long periods of time during which the probability of their fossilization is quite high. But during the actual transition from one category of organism to another the evolving populations are so small and so rapidly changing that they do not leave any fossils to document the transition. In other words, in this new theory, it is postulated that the macroevolutionary process is such that it leaves no direct evidence of its occurrence. Thus we cannot hope to find the evidence we need to substantiate the theory! This odd idea is punctuated equilibria.

18. *Comparative Anatomical Considerations.* The striking anatomical similarities, e.g., in skeletal structure, among the vertebrates are interpreted by evolutionists to be indications of[*6*] common ancestry. Indeed such morphological comparisons have long been the basis for the classification of organisms. Creationists, on the other hand, see the same data as evidence of a common structural plan or of basic conditions for life.

19. *Comparative Biochemical Considerations.* In recent years anatomical comparisons have been supplemented by comparative studies of proteins and nucleic acids isolated from a wide variety of species. Many evolutionists believe that this new molecular information is potentially more powerful than the older method of working out the presumed phylogeny of organisms. For example, phylogenetic trees have been constructed on the basis of comparative amino acid sequence data for the protein, cytochrome c, and on the basis of nucleotide sequences in DNA (Dobzhansky et al. 1977; 281-303). Such "molecular trees" have generally been broadly consistent with those based on comparative anatomy. But there are some impressive anomalies. Molecular trees do not provide independent or persuasive evidence for evolution.

20. *Other Considerations.* Macroevolutionists also generally raise arguments on the basis of phylogenetic reconstruc-

tion, classification, comparative embryology, population genetics, and artificial selection. Besides punctuated equilibria, other schools of macroevolutionist thought are neo-Darwinism's synthesis and in years past classical Darwinism. In contrast to these, many transformed cladists and non-Darwinians question macroevolution, and anti-evolutionists repudiate it. Another important issue is the mechanism of evolution, including (depending on the viewpoint of the evolutionist) some of the following factors: natural selection, mutation, genetic recombination, migration, and genetic drift, under the neo-Darwinian synthesis. Creationist scientists challenge that any or all of these factors can produce or explain macroevolution. A final critical issue is the alleged stages of macroevolution: from unicellular organisms to invertebrates, to vertebrate fish, to amphibians, to reptiles, to birds and mammals, to primates, to humans. Creationist scientists find the scientific evidence to undermine macroevolution and to support biological creation better at each stage.

21. *Conclusion.* Biological evolution is not compelling, and in fact is less scientifically plausible than biological creation.

2. *Biological Creation*

22. *Introduction.* The concept of biological creation is scientific, in my professional opinion, and is supported by affirmative scientific evidence and scientific interpretations thereof.

23. *Paleontological (Fossil) Considerations.* The fossil record reflects *systematic gaps* between categories of organisms.[7] Harvard paleontologist Stephen J. Gould wrote:

> The extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology. The evolutionary trees that adorn our textbooks have data only at the tips and nodes of their branches; the rest is inference, however reasonable, not the evidence of fossils (1977:14).

The gaps are *systematic*, and occur down to the species level (Cf. Eldredge 1980). We now have vastly more fossil species than were known in Darwin's day, and yet the gaps have not been filled in. Not only does the fossil record exhibit systematic gaps, most fossil forms *appear abruptly* in the record, remain essentially unchanged for millions of years (assuming the conventional chronology to be correct), and then abruptly disappear (Gould 1977; Stanley 1979:99-100). This extraordinary situation directly supports creation-science.

24. *Morphological (Structural) Considerations.* Most populations of organisms at any given time are in *stasis* or genetic equilibrium, as the fossil record indicates. Extreme examples of stasis are the so-called "living fossils" such as coelacanths, horseshoe crabs, and *Kakabekia.* This rather systematic similarity of fossil forms to their modern descendants supports biological creation.

25. *Information Content Considerations.* The available evidence indicates that biologic information in polynucleotides (DNA and RNA) must have been impressed on these polymers from the "outside," as discussed below. Similarly, we would expect that the new information required for the origin of significantly more complex new species, genera, families, etc., cannot originate by naturalistic means. It is of course possible that new species, genera, and occasionally even families, may have arisen by natural means since the occurrence(s) of creation, provided that the new forms did not contain significantly more genetic information than their progenitors. Examples here might include Darwin's finches (some of which are known to interbreed in the wild leaving fertile offspring) (Bowman 1982), and the thousands of species of orchids. But changes involving significant increases in complexity and biologic information, such as the presumed, naturalistic transitions from unicellular organisms to invertebrates, fish to amphibians, or reptiles to mammals, are much more problematic. The vast information content of organisms is best explained by creation-science as Hoyle and Wickramasinghe point out (quoted in paragraph 40).

26. *Genetic Considerations.* Since Darwin's time evolutionists have argued that genetic variations among the individuals of a population, plus natural selection operating over thousands of generations, can result in macroevolutionary

changes in evolving[8] lineages. The basic assumption is that genomes can vary in an essentially unlimited way, so that among the viable variants there will be those that contain at least the beginnings of the genetic information required to build significant new anatomical structures. But we cannot demonstrate that this is the case. Virtually nothing is known about the presumed genetic mechanism of speciation (Lewontin 1974:12; Cf. King and Wilson 1975).

What we do know appears to be more consistent with the view that genomes can only vary within limits corresponding roughly to the level of genera or families, but possibly narrower depending upon the genome (species) in question. And let us dispose of a common misconception. The complete transmutation of even one animal species into a different species has never been directly observed either in the laboratory or in the field. All such attempts have ultimately proven fruitless, although in the case of fruit flies some degree of reproductive isolation of laboratory subpopulations has been achieved (Thoday and Gibson 1962). The field studies reported in the evolutionary journals involve *micro*evolutionary change, about which there is no dispute. In any case, even though we may have strong doubts about macroevolution because of the conclusions we have drawn concerning the origin of life, the issue must be decided on the basis of additional evidence.

27. *Comparative Unrelatedness Considerations.* The fields of classification, comparative anatomy, and comparative biochemistry have so many anomalies from evolutionary expectations as better to support the unrelatedness and separate origin of genera or families of organisms. For example, a comparison of amino acid sequences of luteinizing hormone-releasing hormone (LHRH) from several species showed (on the evolutionary view) that amphibians and mammals are more closely related than reptiles and mammals (King and Millar 1979). There are inconsistencies in other molecular trees as well, for example, in the tree based on cytochrome c

(Ayala 1978). Molecular trees based on different substances should at least be consistent with one another.

Colin Patterson (1981) of the British Museum of Natural History maintains that molecular data do not lead to a clear understanding of phylogeny, but rather, in many cases, to "antiknowledge." Comparative sequence data for a given protein or nucleic acid can generate, with the help of a suitable computer program (i.e., one massaged with evolutionary theory), a number of different trees. The "correct" tree is often selected by noting which one most nearly matches the tree based on comparative anatomy. Moreover, different proteins may give rise to different trees. Again the "correct" tree is determined by prior "knowledge" of evolutionary relationships. Creationist scientists believe that the "inconsistencies" among the trees reflect the fact that the basic genera or families of living organisms were separately created. They also point out that in order for proteins isolated from different organisms to be identified as the same type of protein, they must[9] share much of their amino acid sequences in common. So similarity of sequence does not necessarily imply common ancestry, but may reflect *common requirements of engineering design.*

28. *Conclusion.* These scientific considerations constitute the core of biological creation, and show it to be scientific and, in fact, more scientifically plausible than biological macroevolution.

F. *Scientific Nature of The Concepts of Biochemical Creation and Biochemical Evolution*

1. *Biochemical Evolution*

29. *Introduction.* Today we have a large body of chemical information bearing on the problem of the origin of life. It generally supports biochemical creation and undercuts biochemical evolution.

30. *The Haldane-Oparin Hypothesis.* The basis of modern experimental work on chemical origins of life is the Haldane-Oparin hypothesis (Kenyon and Steinman 1969:26-28). The Russian biochemist A. I. Oparin (1924, 1938) and the English

biochemist J. B. S. Haldane (1929) proposed that the first living cells arose by a long, multistage process of prebiological chemical (or biochemical) evolution beginning with the simple gases of the Earth's early atmosphere. Molecular oxygen (O_2) was presumed to have been absent. Various sources of energy, such as ultraviolet rays from the sun, the electrical energy of lightning, heat and radioactivity were thought to have caused the gases to react to form more complex organic substances such as amino acids, sugars, purines and pyrimidines. These substances, i.e., biomonomers, presumably accumulated in the primeval oceans forming an "organic soup" (Oparin 1957). Biomonomers presumably linked together to form the first proteins, nucleic acids and other biopolymers. The next stage in this hypothetical complexification of carbon compounds involved the aggregation of polymer molecules into microscopic units called "protocells." Competition among the protocells presumably led to the formation of the first living cells (Oparin 1957:301-341).

31. *Assumptions.* Some of the assumptions of the Haldane-Oparin hypothesis are as follows: (1) The Earth's primitive atmosphere either contained no molecular oxygen, or only trace amounts of it. This assumption is especially important since O_2 would have prevented any significant chemical evolution from the primitive gases to more complex compounds. (2) Large amounts of biomonomers accumulated on the surface of the primitive Earth in spite of the fact that the energy sources that promoted their synthesis from the primitive gases would even more effectively have destroyed them. (3) The "preference" of living matter for L-amino acids (rather than the mirror image D-amino acids) and for D-sugars must have developed[*10*] during the overall process of chemical evolution. Proteins are built out of L-amino acids exclusively, and only D-sugars occur in the nucleic acids. (4) Substantial amounts of primitive proteins and nucleic acids accumulated on the primitive Earth. (5) Some of the molecules in protocells contained biologic, i.e., genetic, information.

32. *The Miller Experiments.* In order to test the Haldane-Oparin hypothesis, Stanley Miller enclosed methane, ammonia, water vapor, and molecular hydrogen in a closed glass apparatus to simulate the hypothetical primitive atmosphere of the Earth (Miller 1953). The gases were supplied with a source of energy (electric discharge) and the chemical products were analyzed. Miller found some of the amino acids which occur in proteins. Subsequent work by Miller and many others has demonstrated the formation of small amounts of numerous organic compounds, including many simple biochemicals (Miller and Orgel 1974). In some experiments microscopic "protocell" units have been formed (Fox and Dose 1977; Kenyon and Nissenbaum 1976).

33. *Problems with Assumptions about Early Atmosphere.* Most of the assumptions of the Haldane-Oparin hypothesis are inconsistent with available evidence. For example, we now have evidence from some of the oldest rocks that the Earth's primitive atmosphere had significant amounts of O_2 (Clemmey and Badham 1982; Dimroth and Kimberley 1976).

34. *Problems with Assumptions about Primordial Soup.* Moreover, we have no geologic evidence for the existence of an "organic soup" (Corliss et al. 1981; Nissenbaum et al. 1975). It is likely that any biochemicals formed in the primitive atmosphere or oceans would have been destroyed by the very energy sources which formed them (Hulett 1969; Hull 1960).

35. *Problems with Assumptions of Experiments.* Only tiny amounts of biochemicals are formed in the Miller experiments, but a substantial fraction of the methane is converted to products (Miller and Orgel 1974). Most (60-80%) of the reacted carbon forms a nonbiological amber goo coating the inside of the apparatus (Folsome 1979; Folsome et al. 1975). This material represents the dominant trend of the chemistry in these experiments. Biopolymers, such as proteins and nucleic acids, are not detectable in the apparatus.

Most of the experimental conditions in such studies have been so artifically simplified as to have virtually no bearing on any actual processes that might have taken place on the primitive earth. For example, if one wishes to find a possible prebiotic mechanism of condensation of free amino acids to polypeptides, it is not likely that sugars or aldehydes would be added to the reaction mixture. And yet, how likely is it that amino acids (or any other presumed precursor substance) occurred anywhere on the primitive earth free from contaminating substances, either in solution[*11*] or the solid state? The difficulty is that if sugars or aldehydes were also present polypeptides would not form. Instead an interfering cross-reaction would occur between amino acids and sugars to give complex, insoluble polymeric material of very dubious relevance to chemical evolution. This problem of potentially interfering cross-reactions has been largely neglected in much of the published work on the chemical origins of life. Other aspects of origin-of-life research have contributed to my growing uneasiness about the theory of chemical evolution. One of these is the enormous gap between the most complex "protocell" model systems produced in the laboratory and the simplest living cells. Anyone familiar with the ultrastructural and biochemical complexity of the genus *Mycoplasma*, for example, should have serious doubts about the relevance of any of the various laboratory "protocells" to the actual historical origin of cells. In my view, the possibility of closing this gap by laboratory simulation of chemical events likely to have occurred on the primitive earth is extremely remote. Another intractable problem concerns the spontaneous origin of the optical isomer preferences found universally in living matter.

36. *Problem of Origin of Information Content.* Finally, in this brief summary of the reasons for my growing doubts that life on earth could have begun spontaneously by purely chemical and physical means, there is the problem of the origin of genetic, i.e., biologically relevant, information in biopolymers. No experimental system yet devised has provided the slightest clue as to how biologically meaningful sequences of subunits might have originated in prebiotic polynucleotides or polypeptides. Evidence for some degree of spontane-

ous sequence ordering has been published, but there is no indication whatsoever that the non-randomness is biologically significant. Until such evidence is forthcoming one certainly cannot claim that the possibility of a naturalistic origin of life has been demonstrated.

2. *Biochemical Creation*

37. *Introduction.* The creationist scientific conclusion is that empirical data currently in hand demand the inference that the first living organisms were created. This view of the origin of life is based on a detailed analysis of laboratory information from molecular biology, biochemistry, organic chemistry, the simulation experiments on chemical evolution, as well as relevant aspects of physics, geology, astrophysics, probability and information theory.

38. *Information Content.* At the heart of the molecular activity of all living cells is the genetic coding and protein-synthesizing machinery which stores and translates biologic information. This information is contained in the specific linear sequences of the subunits of DNA, RNA and proteins. At least 20 different proteins are required for the replication of DNA. At least another 50 proteins are needed to transcribe and translate[*12*] the information stored in the DNA molecules into the amino acid sequences of proteins (J. Fox 1978; Sheeler and Bianchi 1980). Among these proteins are the aminoacylsynthetases, the enzymes that link the various amino acids to their respective transfer RNA molecules. In the absence of even one of these enzymes, protein synthesis does not take place. The genetic code is actually read by the aminoacylsynthetases since they match an amino acid with its own transfer-RNA molecule. If we go back into the past to the first time the protein-synthesizing machinery functioned, we are faced with the problem of the origin of the necessary aminoacylsynthetases. Where did the proteins come from before the protein-synthesizing system originated? One can postulate that the necessary proteins formed abiotically in the primitive ocean, but there is virtually no experimental evidence for such a postulate. Another suggestion is that prebiotic DNA

(or RNA) molecules that just happened to contain the biologic information for the synthesis of all the basic proteins of the living state spontaneously formed and were present in the same protocell. But again, the odds against such a process having occurred are overwhelmingly large, and experimental data are lacking.

39. *Analogy*. At this point it will be helpful to mention the oft-cited analogy between biologic information and printing. The statement that functional polynucleotides (nucleic acids) can spontaneously form is equivalent to the statement that the ink and paper of a printed page can organize themselves into a meaningful text. That is, the chemical and physical properties of ink on the surface of paper cause the ink to organize itself into an intelligible sequence of letters. On the contrary, we know that the pattern of ink markings on the page you are reading was impressed on the ink by the printing device. Preexisting, intelligently designed type was intelligently arranged to form the text. The information was impressed on the matter from the "outside." The DNA texts of the first living cells must have originated in an analogous way. The nucleotide sequences cannot be deduced from the chemical properties of the nucleotides (Polanyi 1967, 1968). The situation is the same for the amino acid sequences of those enzymes and other proteins that had to be already present in order for the first cycle of cellular protein synthesis to occur. Of course the properties of the molecules must be suitable for the roles they play in living matter, just as the properties of ink must be appropriate for its role on the printed page. However, among the properties of biomolecules and their subunits one will not find the property of spontaneous self-organization into the living state. The origin of printed texts, manufactured devices, and biomolecular systems require intelligent design and engineering knowhow (Wilder-Smith 1970). In each case the characteristic order of the system must be impressed on matter "from the outside."

40. *Probability*. Sir Fred Hoyle and Chandra Wickramasinghe have argued in their book *Evolution from*

Space (1981) that the probability of the spontaneous origin of living matter can be no greater[*13*] than one chance in $10^{40,000}$, and is probably much lower. Therefore, they conclude, the origin of life must have required an intelligence of some kind which was the source of the original biologic information. This intelligence designed the enzymes and other molecules of the living cell. The authors write that these probability and information content considerations both affirmatively support creation (their subtitle was "A Theory of Cosmic Creation") and undercut evolution:

> The theory that life was assembled by an intelligence has, we believe, a probability vastly higher than one part in $10^{40,000}$ of being the correct explanation of the many curious facts discussed in preceding chapters. Indeed, such a theory is so obvious that one wonders why it is not widely accepted as being self-evident. The reasons are psychological rather than scientific (130).

Hoyle and Wickramasinghe further maintain that evolution of the first life on Earth into more complex forms could not have occurred without the influx of preformed genetic material from an extraterrestrial source. Obviously, in their view, one's reasoning about the origin of the first life can have profound implications for one's view on the subsequent evolution of life as well.

41. *Isomers*. The Miller experiments offer no clues concerning the preference of living matter for L-amino acids. All products for these experiments are precisely racemic, i.e., 50-50 mixtures of L- and D-forms (Dickerson 1978; Folsome 1979). The natural chemical tendencies of organic matter consistently produced racemic compounds. Many researchers have attempted to find plausible natural conditions under which L-amino acids would preferentially accumulate over their D-counterparts, but all such attempts have failed (Bonner 1972; Bonner et al. 1980). Until this crucial problem is solved, no one can say that we have found a naturalistic explanation for the origin of life. Instead, these isomer preferences point to biochemical creation.

42. *Chemical Tendency away from Life.* Creationist scientists maintain that laboratory studies have shown that simple organic matter does not move in the direction of the living state; it does move in other directions, the most prominent of which is the formation of non-biological macromolecular material. Future research is not likely to disclose conditions under which pure water at 1 atmosphere of pressure will boil at 50°C, or turn red. Likewise, future research is not likely to disclose plausible natural conditions under which carbonaceous matter can organize itself into living matter. Organic compounds have certain properties. They react in certain ways, and not in others. For example, a solution (or even a nearly dry mixture) of amino acids and sugars will form the non-biological substance melanoidin; it will not form polypep[*14*]tide and polysaccharides. Methane, ammonia and water vapor bombarded with ultraviolet light will form small amounts of racemic amino acids; they do not form amino acids containing an excess of the L-isomer, as we have seen. Another consideration, which I will not discuss here, is the thermodynamic line of analysis relevant to biochemical creation.

43. *Conclusion.* These scientific considerations form the core of biochemical creation, and show that it is as scientific as chemical evolution, and in fact is preferable in scientific plausibility to chemical evolution. These are weighty issues of fact. Evidence often taken to support a naturalistic chemical origin of life, actually, upon close analysis, points in another direction, namely, toward the conclusion that the first life was created. The data of molecular biology, especially the details of the genetic-coding and protein-synthesizing systems, lend further powerful support to this view. Probability arguments applied to the problem of the origin of genetic information also confirm the creationist view of origins. Laboratory data and theoretic arguments concerning the origin of the first life lead one to doubt the evolution of subsequent forms of life. The fossil record and other lines of evidence confirm this suspicion. In short, when all the available evidence is carefully

assessed in toto, the evolutionary story of origins appears significantly less probable than the creationist view.

G. *Educational Merit of Balanced Presentation of Creation-Science with Evolution*

44. *Biased Textbooks.* Many high school science texts contain whole chapters on evolution written in such a way as to give the student the impression that evolution is the only reasonable explanation of biologic origins. This unfortunate and unwarranted dogmatism is common today, although a few current high school texts briefly mention the creationist alternative. One rarely finds a balanced treatment of the creation-evolution controversy in university level biology textbooks.

45. *Educational Merit.* Creation-science has educational merit, can be taught in the classroom in a strictly scientific and nonreligious sense, and can be so presented in textbooks.

[Notarized signature not reproduced]

2. AFFIDAVIT OF DR. W. SCOT MORROW* IN BIOCHEMISTRY AND GENERALLY

STATE OF SOUTH CAROLINA)
COUNTY OF SPARTANBURG) [R.D. 77 Ex. 2]

I, W. SCOT MORROW, make the following free and voluntary statement, after being duly sworn, and state on oath as follows:

A. *Personal*

1. My name is W. SCOT MORROW, and I reside in Spartanburg County, South Carolina. I am a biochemist.

2. I make this Affidavit with the understanding that it is to be used in the above-styled case. All statements herein are within my personal knowledge (including the types of knowledge on which experts in my field typically rely in forming expert opinions on the subject). I am competent to testify to the facts recited in this Affidavit.

B. *Academic Credentials*

3. *Education.* I earned my Ph.D. degree in biochemistry from the University of North Carolina at Chapel Hill in 1969. I earned an M.S. in analytical chemistry at St. Joseph's College in 1964, and a B.Sc. in chemistry in 1959 from Philadelphia College of Pharmacy and Science.

4. *Professional Experience.* I am an Associate Professor in the Chemistry Department of Wofford College, where I have taught[2] since 1970. I have taught courses in biochemistry, physical biochemistry, physical chemistry, general chemistry, and pharmacology. I was an Assistant Professor in the Biology Department of Concord College from 1968 to 1970.

5. *Publications.* I published a written abstract of an oral presentation on the laboratory synthesis of thermal proteinoids, based on research, in the *Bulletin of the South Carolina Academy of Science* with a co-author. I have published three other written abstracts on other topics in that journal with co-authors, two articles in the *Proceedings of the West Virginia Academy of Science*, a summary technical report in the form of a letter to the editor of the *Journal of the American Chemical Society*, with co-authors, and one article in *Industrial and Engineering Chemistry* with co-authors.

C. *Summary*

6. *Background.* I am not a creationist or a religious Fundamentalist, and instead an evolutionist and Agnostic.

7. *Conclusions.* My conclusions are that creation-science is scientific, nonreligious, and educationally worth while in comparison with evolution. It can be taught and can be presented in a textbook without any religious content. It is affirmative scientific evidence that supports creation-science, and the evidence is not compellingly persuasive that supports evolution.

D. *Definitions of Creation-Science and Evolution*

8. *Definitions.* Creation-science is a scientific model or hypothesis that attempt to account for the "origins" of material entities or systems in our world by means of their *relatively sudden or abrupt appearance* in complex form with the passage of time. It is intrinsically non-gradualist in its emphasis,

and relies strongly on catastrophic events occuring in nature, rather than uniformitarian alternatives. Creation-science addresses the interrelated topics of the origin of organisms, the origin of the first life, and ultimately, the origin of the universe. Evolution-science is the same as what is commonly called evolution, and includes the aspects of macroevolution (which creationist scientists challenge) and microevolution (which creationist scientists accept). Evolution embraces not only the origin of organisms, but concepts of evolution of the first life (biochemical or chemical evolution) and of the evolution of the universe (cosmic or stellar evolution).

E. *Comparable Scientific Nature of Creation-Science and Evolution Science*

9. *Biological Creation.* Biological creation addresses the origin of organisms. Creationist scientists offer several areas of what can properly be called affirmative evidence and analy[*3*]sis based on paleontology (the abrupt appearance and systematic gaps between categories of organisms in the fossil record), comparative morphology (stasis and regular similarity between fossil organisms and current descendants if not extinct), information content (information in all living forms and their components), probability (of complex features, etc.), genetics (limits in laws of heredity on viable mutation and variation), and comparative unrelatedness (extensive anomalies in classification, anatomical comparisons, and biochemical comparisons). These involve scientific data and do not involve religious concepts.

10. *Biological Evolution.* While microevolution is accepted by creationist scientists, macroevolution is not compellingly persuasive and has many problems. The alleged mechanisms for macroevolution can be thought to be insufficient on various scientific grounds, whether together or singly, and the mechanisms include natural selection, mutation, genetic recombination, migration, genetic drift, species selection, speciation, and other factors. The evidence for macroevolution is also not compellingly established, whether in the field of paleontology (which raises so many abrupt appearances and

gaps), phylogenetics (which is based on some questionable assumptions), classification (in which the transformed cladists and some others are rebelling against current macroevolutionary thinking), comparative anatomy and comparative embryology (where there are so many anomalies), comparative biochemistry (where there are so many anomalies), and population genetics and artificial selection (which can be said to be irrelevant to macroevolution). The stages of macroevolution similarly lack most of the evidence that would be expected based on the current number of fossils discovered, whether for the stages from unicellular organisms to invertebrates to vertebrate fish, or to amphibians, or to reptiles, or to birds and lower mammals, or to primates, or to humans.

11. *Biochemical Creation.* Biochemical creation also is based on plausible scientific data and analysis, and does not involve religious concepts. This evidence and analysis includes information content (which is immense in simple organisms and their genetic coding systems), probability (which is miniscule for biochemical evolution), isomers (which can be said to point to creation), and thermodynamics (involving entropy considerations).

12. *Biochemical Evolution.* This aspect of evolution (as it is generally recognized) is not compellingly persuasive, and also has significant difficulties. The origin of life experiments often involve unrealistic assumptions, and the various necessary stages for biochemical evolution involve problematic probabilities and cross-interferences.

13. *Sole Alternatives.* Many evolutionists have acknowledged that creation-science (although not their term) and evolution are the sole alternatives, whether on the origin of organisms, the origin of life, or the origin of the universe.[*4*]

F. *Educational Merit of Balanced Instruction in Creation-Science and Evolution-Science*

14. *Contrasting Explanations.* Public schools and universities currently give contrasting explanations on many topics, and can do so with equal profit on the creation-evolution subject. Examples are molecular and covalent explanations for

chemical bonding, particle and wave explanations of light in physics, various interpretations of economics in history.

15. *Indoctrination and Censorship.* The current exclusion of creation-science from most public schools constitutes indoctrination in evolution, in that it is generally the only view taught, and censorship of scientific evidence, that which supports creation-science. To me as an evolutionist, balanced instruction in creation-science and evolution seems to have educational benefit.

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3. AFFIDAVIT OF DR. TERRY L. MIETHE IN PHILOSOPHY AND THEOLOGY

STATE OF VIRGINIA)
CITY OF LYNCHBURG) [R.D. 77 Ex. 3]

I, TERRY L. MIETHE, make the following free and voluntary statement, after being duly sworn, and state on oath as follows:

A. *Personal*

1. My name is TERRY L. MIETHE, and I reside in the City of Lynchburg, Virginia. I am a philosopher and theologian.

2. I make this Affidavit with the understanding that it is to be used in the above-styled case. All statements herein are within my personal knowledge (including the types of knowledge on which experts in my field typically rely in forming expert opinions on the subject). I am competent to testify to the facts recited in this Affidavit.

B. *Academic Credentials*

3. *Educational Data.* My first Ph.D. degree was earned in philosophy at St. Louis University in 1976 (with a grade point average of 3.94). My second Ph.D. degree was earned in theology at University of Southern California in 1984. My M.Div. degree was earned from McCormick Theological Seminary in Chicago (a theologically liberal and neo-Orthodox seminary) in 1973 (with a grade point average of 3.97).

4. *Teaching Experience.* I served as Assistant Professor of Theological Studies and of Man, Technology, and Society at St.[2] Louis University during 1976-1977, and as a Professional Lecturer in philosophy there in 1975-1976.

5. *Publications.* My books include *Thomistic Bibliography: 1940-1979* (with one co-author) and *Augustinian Bibliography, 1970-1980: with essays on the Fundamentals of Augustinian Scholarship.* I have published numerous articles in various journals including *The New Scholasticism, Augustinian Studies,* and *The Modern Schoolman.*

6. *Honor Societies.* I am a member of Alpha Sigma Nu (national Jesuit honor society) Phi Beta Kappa, Phi Alpha Theta (international history honor society), Psi Chi (national psychology honor society), and Eta Sigma Phi (national classical languages honor society).

7. *Scholarships.* Babcock Fellow in School of Religion at University of Southern California (1980-1981); University fellowship at St. Louis University; McCormick scholarship; Miller scholarship.

8. *Professional Organizations.* The professional organizations of which I have been a member (through 1983) include American Philosophical Organization, and American Academy of Religion.

C. *Summary*

9. *Nonreligious Nature of Creation-Science.* My professional opinion as a philosopher and theologian is that creation-science is as nonreligious as evolution, as described herein. The concepts of creation and a creator are not necessarily or inherently religious, and have parallel roles in creation-science and evolution. The mere consistency of evolution and creation-science with various religious viewpoints does not make either inherently religious. The parallel history of religious involvement in the evolution-creation controversy does not make either religious.

10. *Scientific Nature of Creation-Science.* No generally accepted definition of science conforms to the odd and intellectually indefensible definition promulgated by the Arkansas

judge in *McLean v. Arkansas Board of Education.* Even if that definition is accepted, creation-science conforms to its requirements to a comparable extent as evolution. If that ad hoc definition is rejected, a proper definition of science leads to the conclusion that creation-science is scientific.

11. *Sole Alternative Nature of Creation-Science and Evolution.* The sole alternative explanations of the origin of biological life, life itself, and the universe are creation-science and evolution in the scientific realm, although each has many variants. This is not merely my conclusion but is the published conclusions of many leading evolutionist scientists. This point has no relation[3] to philosophical concepts of dualism, and no more relation to Fundamentalist doctrines than to Theological Liberal, Neo-Orthodox, or other religious doctrines.

D. *Definitions of Creation-Science and Evolution*

12. *Creation-Science.* Creation-science refers to abrupt appearance in complex form of biological life, life itself, and the physical universe. Just as not all evolutionist scientists agree on the definition of evolution, not all creationist scientists agree on a particular definition of creation-science, but the foregoing is in my opinion the most accurate definition. Creation-science has changed in content over the past decade, and is different from the religious views of creation that prevailed over the past centuries, although it is strikingly similar to the scientific arguments raised by Agassiz a century ago, Pasteur just before that, and Newton several centuries ago.

13. *Evolution.* Evolution-science is equivalent to what is generally termed evolution. Evolution in turn includes not only biological concepts of macroevolution from unicellular life through fish and amphibians to reptiles and mammals and then to apes and man, but also includes the origin of the first life (biochemical or chemical or prebiotic evolution) and the origin of the universe (cosmic or stellar or solar evolution).

E. *Comparable Scientific Nature of Creation-Science and Evolution*

14. *General.* Creation-science consists of scientific data and interpretations thereof, in the fields of paleontology, molecular biology, anatomy, biochemistry, thermodynamics, and other fields. It does not consist of or serve as equivalent to any religious doctrine of origin such as the Genesis account, any more so than evolution is merely consistent but not identical with various religious accounts of origins.

15. *Definition of Science.* There is no one definition of science on which philosophers of science (the discipline that appropriately defines science) are agreed. Various prevailing definitions include the classical approach of Bacon, the approach of Popper, the scientific revolution approach of Kuhn, the approach of Hanson, the denial that a definition can be formulated, the anarchistic approach of Feyerabend, the operational approach, and logical positivism. The typical textbook approach of observation, hypothesis, analysis, theory, and similar factors is not accepted by philosophers of science as being an accurate definition of science. The insistence on natural law as prerequisite to science is closely related to the narrow and not-majority-accepted approach of logical positivism, a philosophy that is not self-evidencing and has serious logical flaws.[*4*]

16. *Arkansas Definition.* The one thing on which most philosophers of science, other than those surrendering intellectual honesty for political expedience, would agree is that the definition of science adopted by the Arkansas judge in *McLean versus Arkansas Board of Education* is wrong and does not appear in any philosophy of science literature other than post-decision publications by one or more expert witnesses for the plaintiffs in that case. In other words, the definition is totally arbitrary and appears to be contrived for the purpose of excluding creation-science from science by definition. (The Arkansas definition requires guidance by natural laws, explanation by natural laws, testability, falsifiability, and tenta-

tiveness, although it does not specify whether one, most, or all of these factors are required.)

17. *Conformity to Arkansas Definition of Science.* Even if this Arkansas definition were accepted, creation-science conforms to it to the same extent that evolution does. Both explanations involve parts conformable to natural laws and parts not conformable to natural laws. Both explanations involve parts that are testable and parts that are not testable, as extensive literature demonstrates for evolution. Both explanations involve parts that are falsifiable and parts that are not falsifiable, as again extensive literature demonstrates for evolution. Many testable and falsifiable aspects of creation-science can be listed. Finally, while both explanations sometimes have been stated with dogmatism, creation-science seems in general to be far less dogmatically and far more tentatively held than evolution, as evidenced among other things by evolutionists' insistence that evolution is "fact."

18. *Sole Scientific Alternatives as Creation-Science and Evolution.* Many evolution scientists of towering stature have acknowledged in print that creation-science (although they use a different term) and evolution are the sole logical alternatives regarding the origin of biological life, life itself, and the physical universe. This position has no necessary relation to Fundamentalism or any other religious belief.

F. *Comparable Nonreligious Nature of Biological Creation and Biological Evolution*

19. *Creation and Creator.* The concept of creation as used in creation-science (abrupt appearance in complex form) is not inherently religious and is scientific. The concept of creation itself is not inherently religious, as evidenced by its use in ancient and modern philosophy and logic, in the big bang hypothesis, in the continuous creation (steady state) hypothesis, in the panspermia hypothesis, etc. The concept of a creator is not central to creation-science, and in any event is not inherently religious, as evidenced by ancient and modern nonsupernatural concepts of a creator (Aristotle, Ambrose, Hoyle, etc.), in academic discussion (such as philosophy de-

bate about the existence of a creator), and in United[5] States Supreme Court decisions (about the pledge to the flag, Declaration of Independence, national motto, etc.).

20. *Parallel World Views.* Creation-science and evolution are equally parallel or consistent with various world views. Evolution is consistent with materialism and naturalism to the same extent that creation-science is consistent with theism.

21. *Parallel Religions.* Creation-science and evolution are each distinguishable from various religions, but are each consistent (while not identical) with various religions. In the case of creation-science, it is parallel not only to Protestant religions but to Catholic (Orthodox), Jewish (Orthodox), and non-Judeo-Christian religions (Muslim, etc.). In the case of evolution, it is equally consistent with various religions that include Protestant ones (religious humanism, Unitarianism, Theological Liberalism, and neo-Orthodoxy), Catholic (Modernist and neo-Orthodox), Jewish (Reform), and non-Judeo-Christian (Hindu, Buddhist, secular humanist, evolutionary humanist, Agnostic, etc.).

22. *Other Religious Parallels.* Although none of the following factors make creation-science or evolution inherently religious, it is important to point out that both are consistent with religious creationist and religious evolutionist views in ancient and modern religious texts, both are consistent with various religious beliefs, both include scientists with religious motives, both include scientist advocates with religious publications or activities, both involve nontestable and nonfalsifiable aspects that require scientific faith, and both involve concepts of teleology.

G. *Comparable Historic Occurences for Creation-Science and Evolution*

23. *Parallel History.* It is not true that scientific views of creation have been supported only by religious spokesmen while scientific views of evolution have been supported only by scientists. In the late 1800s, the crucial support for evolution came from theologians; and in the early 1900s, Modernist

Protestants advocated evolution to the same extent that Fundamentalist Protestants advocated creation. At present, significant religious support still exists for evolution. On the other hand, scientific views of creation have always been advocated by scientists, beginning in the late 1800s with Agassiz, Owens, etc., and carrying through the early 1900s to the present day.

24. *Fundamentalism.* Creation-science is not equivalent to religious Fundamentalism, and is no more consistent with it than evolution is with various religions. The definition of Fundamentalism advocated by the ACLU in the present case is not theologically accurate in that it is far too broad. An academically acceptable definition of Fundamentalism would require not just belief in[*6*] inerrancy of scripture but also ecclesiastical separatism, moral separatism, pre-millenial views of prophecy, dispensational views of theology, active evangelism, opposition of neo-Evangelicalism, and the charismatic movement, insistence on private religious education, and political conservatism, as well as possibly other elements. As such, creation-science is clearly different from religious Fundamentalism, and draws the majority of its support from non-Fundamentalist sources. In fact, many leading Fundamentalists have opposed balanced treatment for creation-science in public schools.

25. *Parallel Political Activity.* It is not true that advocates of creation-science have lobbied while advocates of evolution have ignored the political arena. Current-day lobbying appears to be far more prevalent by evolutionists opposing creation-science instruction than by creationists supporting it. Evolutionist lobbying has been carried on by the American Civil Liberties Union, People for the American Way, Committees on Correspondence (which now have a new name), the American Humanist Association, the American Association for the Advancement of Science, the National Academy of Science, the National Association of Biology Teachers, the National Educational Association, the Biological Sciences Curriculum Study, and other organizations. At the same

time, the leading creationist organizations have in general opposed legislation regarding balanced treatment of creation-science and evolution.

H. *Conclusion*

26. There are significant issues of fact that require expert testimony and documentary evidence for resolution. Creation-science is as scientific and as nonreligious as evolution.

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4. AFFIDAVIT OF REV. DR. WILLIAM G. MOST* IN THEOLOGY

STATE OF IOWA)
COUNTY OF DUBUQUE) [R.D. 77 Ex. 4]

I, REV. DR. WILLIAM G. MOST, make the following free and voluntary statement, after being duly sworn, and state on oath as follows:

A. *Personal*

1. My name is REV. DR. WILLIAM G. MOST, and I reside in Dubuque County, Iowa. I am a theologian.

2. I make this Affidavit with the understanding that it is to be used in the above-styled case. All statements herein are within my personal knowledge (including the types of knowledge on which experts in my field typically rely in forming expert opinions on the subject). I am competent to testify to the facts recited in this Affidavit.

B. *Academic Credentials*

3. *Educational Degrees.* My Ph.D. degree was earned in classics from Catholic University in 1946, my M.A. degree in Catholic theology from Catholic University, and my B.A. degree from Columbia College, Dubuque (now Loras College) in 1940.

4. *Teaching Experience.* I am a Professor at Loras College, a Catholic institution, and have been such from 1946 to present. I have taught graduate courses at the Dubuque branch of Catholic University, and at Mt. St. Bernard's Seminary in Dubuque.[2]

5. *Professional Memberships.* I am former President of the Mariological Society of America, a member of the Catholic Biblical Association of America, Catholic Theological Society of America, American Philological Association, North American Patristic Society, Association of Ancient Historians, and Pontifical International Marian Academy.

6. *Publications.* My published books include *St. Augustine de Civitate Dei, Mary in Our Life, Novum Tentamen ad Solution-em de Gratia et Praedestinatione, Covenant and Redemption,* and *The Conciousness of Christ.* I have published articles in Catholic Biblical Quarterly, American Ecclesiastical Review, Homiletic and Pastoral Review, Emmanuel, Pastoral Life, Priest, Spiritual Life, Cross and Crown, Marianum, Ephemerides Mariologicae, Marianist, Classical Journal, Classical Folia, Classical Bulletin, Classical Outlook, Catholic Educational Review, Encyclopedia Americana, New Catholic Encyclopedia, Encyclopedic Dictionary of Religion, and Journal for Study of New Testament.

C. *Summary*

7. *Science and Religion and Creation-Science.* My professional opinion is that creation-science is not religious. It appears to me to be scientific.

8. *Personal Position.* I am personally wide open on the question of evolution from a religious point of view, as long as it is not formulated in atheistic terms. I believe that the answer must come from science, but the scientific evidence for evolution appears to be shockingly poor. I personally support balanced instruction in creation-science and evolution in the name of openness, for the purpose of not teaching that something is proved when the evidence falls far short of that. I regard the exclusion of creation-science to be poor intellectual formation and intellectual narrowness, conclusions which are independent of religious considerations.

D. *Comparable Nonreligious Nature of Creation-Science and Evolution*

9. *Concepts of Creation and Creator.* The concept of creation is not inherently religious and is nonreligious when de-

fined as abrupt appearance in complex form. The concept of a creator is also not inherently religious, although it can be stated in religious terms; and it is not religious in its relation to creation-science. Creation-science is no more supportive of religious concepts of a creator or other religious doctrines than evolution is in its theistic evolutionist formulations.

10. *Existence of Parallel Religions*. It is true that some religions are consistent with creation-science but it is equally[*3*] true that a similar group of religions are consistent with evolution. Religions with evolutionist accounts of origins include Modernist Catholicism, Theological Liberal and Neo-Orthodox, and Humanist Protestantism, most reform Judaism, and non-Christian religions such as Hinduism and Secular Humanism. Religions with creationist accounts of origins include many or most orthodox Roman Catholics and Eastern Orthodox communicants, conservative evangelicals and other Protestants, as well as Fundamentalists, Orthodox Jews, and non-Judeo-Christian religions such as Islam. Evolution has been as consistent with particular religions as has been creation-science.

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5. AFFIDAVIT OF DR. ROBERT J. CLINKERT IN EDUCATION

STATE OF ILLINOIS)
COUNTY OF DU PAGE) [R.D. 77 Ex. 5]

I, ROBERT J. CLINKERT, make the following free and voluntary statement, after being duly sworn, and state on oath as follows:

A. *Personal*

1. My name is ROBERT J. CLINKERT, and I reside in [Du Page] County, Illinois. I am an education administrator.

2. I make this Affidavit with the understanding that it is to be used in the above-styled case. All statements herein are within my personal knowledge (including the types of knowledge on which experts in my field typically rely in forming

expert opinions on the subject). I am competent to testify to the facts recited in this Affidavit.

B. *Academic Credentials*

3. *Educational Degrees.* I earned my Ph.D. degree in education at Loyola University of Chicago in 1977. My M.A. in mathematics and education at Stetson University, and my B.A. from the University of Illinois in 1967.

4. *Employment Position.* I have been assistant superintendent for instruction of a public school district, including charge of curriculum, from 1975 through the present. I have also served as adjunct professor of education at National College of Education at Western Michigan University.[2]

C. *Summary*

5. *Science and Religion.* Creation-science is as scientific and as nonreligious as evolution. Creation-science consists of scientific data and its interpretation and not of religious exegesis. Creation-science is not identical to theological fundamentalism. It is advocated by individuals of a broad spectrum of faiths, such as my own Roman Catholicism, just as evolution is propounded by individuals of a wide variety of religious faiths.

6. *Education.* Balanced instruction in creation-science and evolution is educationally valuable, and in fact more so than indoctrination in just evolution. The effect of teaching just evolution in public schools is indoctrination in that viewpoint and censorship of scientific data and interpretation supporting creation-science.

D. *Comparable Educational Value of Creation-Science and Evolution*

7. *Contrasting Explanations.* A widely accepted educational method is teaching by contrasts. This approach is employed in typical public school biology, chemistry, physics, economics, history, literature, and other courses.

8. *Possibility of Balanced Treatment.* Creation-science can be taught in the classroom in a strictly scientific context and can be presented in precollege level textbooks in such a strictly scientific context. Balanced treatment of creation-sci-

ence and evolution constitutes teaching by contrasts, and can be implemented by any competent public school teacher who has taught evolution in a subject. Teachers are often not specifically trained in actual curricular material that they teach but by their training are equipped to teach from a textbook or other resource materials a new topic. My experience in public school administration and development of instructional programs, along with my doctorate in education, forms the basis for these conclusions.

9. *Exclusive Presentation of Evolution.* Most public schools on a national basis do teach evolution, and most do not teach creation-science. From an educational standpoint, this constitutes indoctrination in evolution and censorship of scientific data supporting creation-science.

[Notarized signature not reproduced]

APPENDIX C. BALANCED TREATMENT FOR CREATION-SCIENCE AND EVOLUTION-SCIENCE ACT, LA. REV. STAT. § 286.1 ET SEQ.

SUB-PART D-2. BALANCED TREATMENT FOR CREATION-SCIENCE AND EVOLUTION-SCIENCE IN PUBLIC SCHOOL INSTRUCTION

§286.1. Short Title

This Subpart shall be known as the "Balanced Treatment for Creation-Science and Evolution-Science Act."

§286.2. Purpose

This Subpart is enacted for the purposes of protecting academic freedom.

§286.3. Definitions.

As used in this Subpart, unless otherwise clearly indicated, these terms have the following meanings:

(1) "Balanced treatment" means providing whatever information and instruction in both creation and evolution models the classroom teacher determines is necessary and appropriate to provide insight into both theories in view of the textbooks and other instructional materials available for use in his classroom.

(2) "Creation-science" means the scientific evidences for creation and inferences from those scientific evidences.

(3) "Evolution-science" means the scientific evidences for evolution and inferences from those scientific evidences.

(4) "Public schools" mean public secondary and elementary schools.

§286.4. Authorization for balanced treatment; requirement for nondiscrimination

A. Commencing with the 1982-1983 school year, public schools within this state shall give balanced treatment to creation-science and to evolution-science. Balanced treatment of these two models shall be given in classroom lectures taken as a whole for each course, in textbook materials taken as a whole for each course, in library materials taken as a whole for the sciences and taken as a whole for the humanities, and in other educational programs in public schools, to the extent that such lectures, textbooks, library materials, or educational programs deal in any way with the subject of the origin of man, life, the earth, or the universe. When creation or evolution is taught, each shall be taught as a theory, rather than as proven scientific fact.

B. Public schools within this state and their personnel shall not discriminate by reducing a grade of a student or by singling out and publicly criticizing any student who demonstrates a satisfactory understanding of both evolution-science or creation-science and who accepts or rejects either model in whole or part.

C. No teacher in public elementary or secondary school or instructor in any state-supported university in Louisiana, who chooses to be a creation-scientist or to teach scientific data which points to creationism shall, for that reason, be discriminated against in any way by any school board, college board, or administrator.

§286.5. Clarifications.

This Subpart does not require any instruction in the subject of origins but simply permits instruction in both scientific models (of evolution-science and creation-science) if public schools choose to teach either. This Subpart does not require each individual textbook or library book to give balanced treatment to the models of evolution-science and creation-science; it does not require any school books to be discarded. This Subpart does not require each individual classroom lecture in a course to give such balanced treatment but simply permits the lectures as a whole to give balanced treatment; it permits some lectures to present evolution-science and other lectures to present creation-science.

§286.6 Funding of inservice training and materials acquisition

Any public school that elects to present any model of origins shall use existing teacher inservice training funds to prepare teachers of public school courses presenting any model of origins to give balanced treatment to the creation-science model and the evolution-science model. Existing library acquisition funds shall be used to purchase nonreligious library books as are necessary to give balanced treatment to the creation-science model and the evolution-science model.

§ 286.7. Curriculum Development

A. Each city and parish school board shall develop and provide to each public school classroom teacher in the system a curriculum guide on presentation of creation-science.

B. The governor shall designate seven creation-scientists who shall provide resource services in the development of curriculum guides to any city or parish school board upon request. Each such creation-scientist shall be designated from among the full-time faculty members teaching in any college and university in Louisiana. These creation-scientists shall serve at the pleasure of the governor and without compensation.

Section 2. If any provision or item of this Act or the application thereof is held invalid, such invalidity shall not affect other provisions, items, or applications of this Act which can be given effect without the invalid provisions, items, or applications, and to this end the provisions of this Act are hereby declared severable.

Section 3. All laws or parts of laws in conflict herewith are hereby repealed.

Approved by the Governor: July 20, 1981.

APPENDIX D. LIPSON*, A PHYSICIST LOOKS AT EVOLUTION, 31 PHYSICS BULL. 138 (1980)

> **[Note: This is a sample of numerous articles by non-creationists that question critical elements of evolution and acknowledge the possible scientific validity of creation-science.]**

Darwins's book, *On the Origin of Species*, was published in 1859. It is perhaps the most influential book that has ever been published, because it was read by scientist and non-scientist alike, and it aroused violent controversy. Religious people disliked it because it appeared to dispense with God; scientists liked it because it seemed to solve the most important problem in the universe—the existence of living matter. In fact, evolution became in a sense a scientific religion; almost all scientists have accepted it and many are prepared to 'bend' their observations to fit in with it.

What has this to do with physics? Is it not biology? Perhaps so, but I believe strongly that physicists should be prepared to turn their minds to any problems to which they can make contributions. The work of Perutz and Kendrew on the structures of haemoglobin and myoglobin, and of Hodgkin and Huxley on nerve and muscle, shows that physical scientists can make important contributions to biological research.

I have always been slightly suspicious of the theory of evolution because of its ability to account for *any* property of living beings (the long neck of the giraffe, for example). I have therefore tried to see whether biological discoveries over the last thirty years or so fit in with Darwin's theory. I do not think that they do.

Darwin himself had considerable doubts; his book contains a chapter called 'Difficulties on theory'. Of particular interest to the physicist are his remarks about the eye: 'To suppose that the eye, with its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest possible degree,' Nevertheless, he goes on to suggest how an eye *could* have developed from a simple light sensitive organ, but there is no evidence that it *did* develop in that way.

Relevance of recent research

In 1859 the general principles of the body were understood. The functions of the various organs were known but not the details of their operation. In the last thirty years we have learned a great deal about life processes (still a minute part of what there is to know!) and it seems to me to be only fair to see how the theory of evolution accommodates the new evidence. This is what we should demand of a purely physical theory.

To my mind, the theory does not stand up at all. I shall take only one example—breathing. Darwin knew, of course, that we draw air into our lungs, that the oxygen in it is somehow incorporated into our blood, and that the heart pumps the blood round our bodies so that the oxygen can perform its required services. He had no idea how complex the whole operation is. We know that it involves a complicated chemical, haemoglobin, the molecule of which contains several thousand atoms. Thanks to the work of people such as Perutz and Kendrew, we now know how the molecule is constructed and we know the conditions under which the oxygen molecules are held and released. We still do not understand the nature of the forces; they are necessarily very delicate, and for this reason a large molecule is needed.

Darwin says 'If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications my theory would absolutely break down.' I know that haemoglobin is not an organ but the principle is the same; I do not see how the haemoglobin molecule could have evolved. It is true that haemoglobins in different animals are not identical, but they are all about equally complicated. (Personally, I cannot envisage the evolution of even a simple organ such as the heart, but no doubt other people have better imaginations than I!)

Thermodynamical considerations

The beautiful and meticulous system which we call a living being is an ordered one; each atom must be in its right place. Generally systems tend to disorder—maximum entropy. Living beings seem to disobey this rule.

There is however a well known phenomenon that does defy the rule—crystallisation. It may be thought that this is a simple analogue from which the principles of life may be developed. We know, however, that crystallisation occurs because entropy S is not the deciding factor; internal energy U is also important. The quantity that must be minimised is the free energy, (U-TS), and U is small for a crystal because the atoms are carefully packed together. As the temperature T increases. S becomes more important, and the crystal first becomes liquid (usually) and then gaseous.

Therefore, if we wish to regard the birth of an animal as regulated by the principles of thermodynamics, we must believe that the developing arrangement of atoms is that of lowest internal energy. My mind boggles!

Alternative to evolution

If living matter is not, then, caused by the interplay of atoms, natural forces and radiation, how has it come into being? There is another theory, now quite out of favour, which is based upon the ideas of Lamarck: that if an organism needs an improvement it will develop it, and transmit it to its progeny. I think, however, that we must go further than this and admit that the only acceptable explanation is *creation*. I know that this is anathema to physicists, as indeed it is to me, but we must not reject a theory that we do not like if the experimental evidence supports it.

An animal—particularly the human animal—is a beautiful example of a carefully contrived and subtly engineered design. The word 'design' comes naturally even in evolutionist books. The Designer must know infinitely more science than we shall ever know. He started off with a few simple examples and, learning from them, introduced new and improved species. He gradually incorporated new properties, imagination and free will being the latest ones. He is probably learning that these are not enough, since they seem to cultivate a propensity to selfdestruction.

I find these ideas comforting, for if we do destroy ourselves, a superior model will be created, whereas according to the theory of evolution we are doomed.

I should be happy to know what my fellow physicists think of these admittedly extraordinary ideas. In putting them forward I can claim to be in good company. According to Darwin, when Newton put forward his theory of gravitation, Leibnitz accused him of introducing 'occult qualities and miracles into philosophy.' What was this gravitation? How could two inanimate bodies attract each other? Newton replied laconically 'Hypotheses non fingo'. When I am asked to describe my ideas of the Creator I also say 'Hypotheses non fingo'!

Darwin was fond of the quotation 'Natura non facit saltum' (Nature does not make jumps). I wonder what he would have thought of the quantum theory!

APPENDIX E. FIRST AMENDMENT TO THE U.S. CONSTITUTION

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

CERTIFICATE OF SERVICE
(Pursuant to S.Ct.R. 28.5(b))

I hereby certify, as a member of the bar of the Supreme Court of the United States, that on this 19th day of June 1986, three copies of the brief of appellants and a statement concerning first class mailing, were served by first class mail (* one by Federal Express) with the envelope duly addressed and with postage prepaid to the attorneys of record of all other parties of record as follows:

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I further certify that service is not required on any other persons, and that all parties required to be served have been served. Rule 28.

Wendell R. Bird
Attorney for Appellants